

SOUTHWEST ASIA I IRAN, IRAQ, KUWAIT, AND SAUDI ARABIA

INTERSCHOOL SUBCOURSE IS3008

EDITION C

10 CREDIT HOURS

March 1999

Prepared by

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SUBCOURSE OVERVIEW

This subcourse was designed to teach you the history, weather, terrain, lines of communications (LOCs), and the military capabilities of Iran, Iraq, Kuwait, and Saudi Arabia.

There are no prerequisites for this subcourse.

This subcourse reflects the doctrine which was current at the start of Operation Desert Storm. To supplement the data presented in this subcourse, we recommend the use of other sources (classified or unclassified) of information.

Unless otherwise stated, the masculine gender of singular pronouns is used to refer to both men and women.

Terminal Learning Objective:

- | | |
|------------|---|
| Action: | You will describe the history, weather, terrain, and LOCs; and identify the military capabilities of Iran, Iraq, Kuwait, and Saudi Arabia. |
| Condition: | You will have access to extracts from CIA World Factbook 1997, DA Pam 550-31, DA Pam 550-51, DA Pam 550-68, DA Pam 550-185, FM 34-72 (Coordinating Draft), FM 44-30 , USAITAC Order of Battle Handbook AIA-DS-1-090, USAITAC Order of Battle Handbook AIA-DS-2-90, 11 th SFG Field Order of Battle Handbook, NTC Handbook 100-91, USAIC&FH SupR TCSUCC, International Institute for Strategic Studies (IISS) on The Military Balance 1990-1991 and Microsoft Encarta Encyclopedia 98, Jane's Sentinel Security Assessment, The Gulf States 2 nd update Apr 98, Milnet 1998 Website at http://www.milnet.com/milnet/index.html . |

Standards: To demonstrate competency of this task, you must achieve a minimum of 70% on this subcourse examination.

NOTE: ACCP Subcourse [IS3009](#) encompasses the history, weather, terrain, LOCs, and the military capabilities of Bahrain, Israel, Jordan, Lebanon, Oman, Qatar, Syria, United Arab Republics (UAE), and Yemen. Military equipment, previously contained in Subcourse IS3008 (Edition A), was transferred to Subcourses IS3010 and IS3011, which contain such equipment of Northeast African and South and Southwest Asian countries.

ACKNOWLEDGEMENT: Special thanks go to the International Institute for Strategic Studies for permitting us to use selected information from IISS The Military Balance 1990-1991.

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LESSON 1

IRAN

Critical Task: None

OVERVIEW

LESSON DESCRIPTION:

In this lesson, you will learn to describe the history, weather, terrain, and LOCs; and identify the military capabilities of Iran.

Terminal Learning Objective:

- | | |
|------------|---|
| Action: | Describe the history, weather, terrain, and LOCs; and identify the military capabilities of Iran. |
| Condition: | You will be given extracts from CIA World Factbook 1997, DA Pam 550-68, FM 34-72 (Coordinating Draft), and IISS The Military Balance 1990-1991. |
| Standards: | Description of the history, weather, terrain and LOCs; and identification of the military capabilities of Iran will be in accordance with CIA World Factbook 1997, DA Pam 550-68, FM 34-72 (Coordinating Draft), and IISS The Military Balance 1990-1991. |

REFERENCES: The material contained in this lesson was derived from the following publications:

CIA World Factbook 1997.

DA Pam 550-68.

[FM 34-72](#) (Coordinating Draft).

IISS The Military Balance 1990-1991.

Microsoft Encarta 98 Encyclopedia.

Milnet 1998 Website at <http://www.milnet.com/milnet/index.html>.

Jane's Sentinel Security Assessment.

The Gulf States and update Apr 98.

INTRODUCTION

This lesson is an attempt to treat in a concise and objective manner the dominant military aspects of Iran. Information used in this lesson was obtained from unclassified sources. Military equipment of Iran is in Subcourses IS3010 and IS3011.

PART A: HISTORY, WEATHER, TERRAIN AND LOCs of IRAN

1. General information. Iran (ee RAHN) is an ancient country of the Middle East located in Southwestern Asia which is about two and a half times larger than the state of Texas. The country is bordered to the north by the former (independent) Soviet Central Asian Republics of Turkmeistan, Azerbaijan and Armenia, to the west by Turkey and Iraq, to the south by the Persian Gulf, and to the east by Afghanistan and Pakistan. [Figure 1-2](#) shows a country outline of Iran.

2. Statistical data.

Name:	The Islamic Republic of Iran (Jumhurive Islamiye Iran)
Capital:	Tehran
Population:	67,540,002 (July 1997)
Area:	1,648,000 square kilometers (km ²)
Ethnic divisions:	51% ethnic Persian, 24% Azerbaijani, 7% Kurd, 8% Gilacki and Mazandarani, 2% Lur, 1% Baloch, 1% Arab, and 3% other.
Literacy rate:	72.1%
Religion:	89% Shiite Muslim, 10% sunni Muslim, 1% others.
Language:	Farshi, Kurdish, Turkic, Arabic, Aramic, Armenian, English, French, and German.
Gross national product (GNP):	\$ 80 billion
Per capita income:	\$1,400/annum
Unit of currency:	Iranian rial (IR)
Exchange rate:	\$1 - \$1,755.12 IR (Jan 1997)
Time zones:	Three hours ahead of universal time coordinated (UTC); eight and a half hours ahead of US Eastern Standard Time; time zones are CHARLIE and DELTA.
Defense forces:	Army, Revolutionary Guard Corps (RGC), Air Force, Navy, and paramilitary forces.

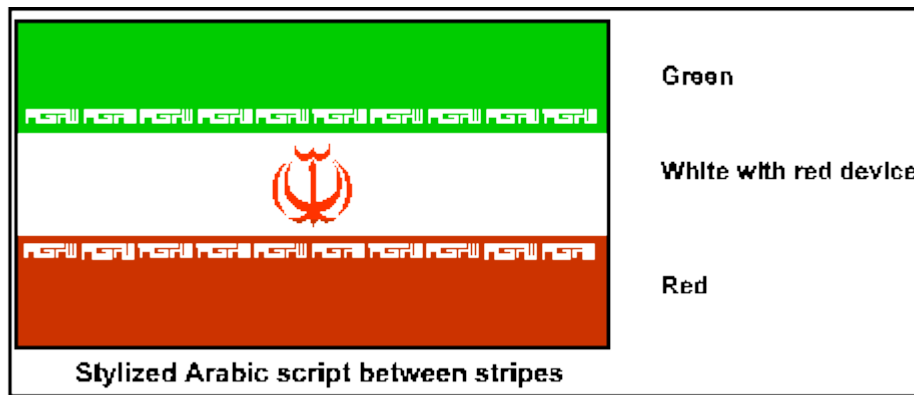


Figure 1-1. Flag of Iran.



Figure 1-2. Iran.

3. History.

a. Historical background.

(1) Present-day Iran--formerly known as Persia--has been occupied by peoples with a variety of cultures since 6000 B.C. The harsh geography of the region, which is made up

of high mountains, forbidding deserts, and huge, uninhabitable salt marshes, discouraged the early formation of a centralized political or economic entity and postponed the growth of urban centers. Persia's recorded history began in approximately 1000 B.C. when small groups of nomadic, horse-riding peoples (Persians, Medes, and Scythians) speaking Indo-European languages began moving into the area from Central Asia. During the sixth century B.C., Cyrus II (Cyrus the Great) combined the forces of the Persians with the Medes and set out to establish the most extensive empire in the ancient world.

(2) After the fall of the Persian Empire, Persia was invaded numerous times. Its diverse ethnic blend is the result of waves of foreign invaders who enriched the cultural development of the Persians. This adoption also occurred with Islam. By clinging to their own traditions and values, the Persians established Islam as a universal religion apart from Arab dominance.

(3) During the seventh century A.D. the first and greatest religious split in Islamic history occurred and had a lasting impact on Persia's civic and religious culture. By the 10th century, almost 90% of Persians were Shiites, the largest Shiite population of any country in the Middle East.

(4) By the early 1900s, popular unrest grew with the presence of many foreigners--British, Russians, American, and Germans--who administered and exploited the country. In February 1921 a bloodless coup d'etat occurred in Tehran, and in December 1925 the new Pahlavi Dynasty and administration was installed. In 1933, Shah Reza Khan Pahlavi declared himself Emperor of the Islamic Republic of Iran (farsi name of country) and two years later it was formally recognized as Iran.

b. Recent history.

(1) In 1978 domestic turmoil swept the country as a result of religious and political opposition to the shah's rule. Opponents were particularly critical of western influences on programs which did not conform to the fundamentalist interpretation of Shia Islam. In January 1979 the shah, after appointing a fourth Prime Minister in less than a year, bowed to strong opposition and departed the country. The opposition within Iran originally came from two main sources--the left and the liberal National Front--but was eventually overshadowed by the opposition led by the exiled religious leader, the Ayatollah Khomeini. As support grew for Ayatollah Khomeini toward the end of 1978 and the beginning of 1979, he realized an opportunity to form his own government. While still in exile in Iraq, he established the Islamic Revolutionary Council in anticipation of his return to Iran. In February 1979 the Ayatollah Khomeini returned to Iran and ten days later his armed followers overthrew the government left by the Shah. The Ayatollah then appointed a Prime Minister to form a new government and at the end of March, voters overwhelmingly approved formation of the Islamic Republic of Iran.

(2) On 1 April 1979 an Islamic republic was formed; the government, under Ayatollah Khomeini's autocratic rule, has since been characterized by indiscriminate arrest, torture,

execution of opponents, and economic disorder. Political development has been marred by factional fighting, confusion, and continual crises. These crises include the seizure (and eventual release) of 52 members of the US Embassy staff, an undeclared war with Iraq, internal power struggles and unrest between the major minority groups, and support of Shia terrorist groups in the Middle East.

(3) In September 1980 Iraq initiated military action against Iran. This conflict, in varying intensity, continued through August 1988 when a cease fire was agreed to.

(4) When Khomeini died in June 1989, President Khamenei became Iran's supreme leader. In July Ali Akbar Hashemi Rafsanjani, former speaker of parliament, was elected president and significant amendments were made to the constitution to resolve conflicts between the Majilis and the Council of Guardians. Iran condemned both Iraq's invasion of Kuwait in August and the subsequent deployment of U.S. troops in Saudi Arabia, but resumed diplomatic relations with Iraq, which dropped its territorial claims against Iran. In the Persian Gulf War (1991), Iran remained officially neutral, but provided refuge for more than 100 Iraqi warplanes, which it later seized. After hostilities between allied and Iraqi forces ended, Iran helped Shiite rebels in southern Iraq against the Baghdad government. Rafsanjani supporters won a parliamentary majority in 1992.

(5) Iran's relations with the West began to improve under Rafsanjani's leadership. The betterment in relations was due in part to Rafsanjani's role in obtaining the release of Western hostages held by pro-Iranian Shiite groups in Lebanon, the last of whom was released in 1992. The Iranian economy fared poorly under Rafsanjani as the national debt grew and inflation rose sharply. Iran continued to deny that it is an international sponsor of terrorism and turned aside accusations by both Algeria and Egypt that Iran sponsored terrorist groups in their countries. In June 1993 Rafsanjani was reelected president.

(6) In May 1995 the U.S. cut off all trade and investment with Iran, including the purchase of crude oil by American companies for resale on the world market. The U.S. believed Iran was planning to develop weapons of mass destruction and was supporting international terrorism. Iran found other buyers for its oil among Western countries that did not join the boycott. In January 1996 Iran and Russia concluded a controversial agreement to complete a nuclear power plant at Bushehr which had been begun by West Germany 12 years earlier. Construction started soon after. International critics feared the plant would give Iran the ability to build nuclear weapons. In May 1997 Mohammed Khatami was elected president of Iran by a wide margin. (President Rafsanjani was prohibited by the constitution from seeking a third term.) Khatami, who campaigned for tolerance and social reform, had been minister of culture from 1982 until 1992, when his conservative critics forced him to resign.

4. Weather.

a. Climate.

(1) The climate of Iran is one of great extremes ([Table 1](#)). Seasonal changes are abrupt and clear cut; fall and spring are short. The prevailing winds and mountains combine to produce adequate precipitation in the northwest and along the Caspian Sea, but this moisture is minimal in the eastern deserts. The mountain country of the northwest, particularly the provinces of East and West Azerbaijan, receives sufficient precipitation and mountain runoff to support a variety of crops in the valleys. The four geographical regions of Iran are similar to the climatic subdivisions ([Figure 1-3](#)).

Table 1. Annual Temperatures in degrees centigrade (° C).

REGION	WINTER		SUMMER		EXTREMES	
	MIN	MAX	MIN	MAX	MIN	MAX
Central Plateau	2°	12°	15°	39°	-15°	55°
Northern Zagros Mountains/Elburz Mountains	-6°	5°	12°	25°	-34°	42°
Southern Zagros Mountains	8°	20°	22°	35°	-18°	48°
Eastern Mountains	-4°	8°	18°	32°	-33°	43°

(2) The central plateau has little or no precipitation. Slight amounts of rainfall occur in winter and spring but generally not in summer. Thunderstorms may occur in the spring in the northwest corner by Tehran. Nights are generally clear in the summer, with dense clouds about half the time during winter nights.

(3) In the northern portions of the Zagros Mountains, the climate is somewhat different from the central and southern portion of the range. The northern part experiences heavy snow in winter at elevations of 1,500 meters (m) with some thunderstorms in spring. In the south precipitation is generally insignificant in summer and more pronounced in winter and spring. Skies are clear during most days and nights, with less than one-half cloud cover during winter and spring nights. The annual temperatures are warmer in the southern portion of the Zagros.

(4) The Elburz Mountains in the northern regions of the country have similar temperatures and precipitation to those of the northern Zagros. Snow never quite disappears from the northern slopes of the Elburz Mountains. About 650 km to the southeast, however, at elevations of 610 m are some of the hottest and driest areas of the world. Temperatures there compare to the southern Zagros Mountains. Along the Persian Gulf and Caspian coast, oppressively high humidity accompanies temperatures as high as 40° C.

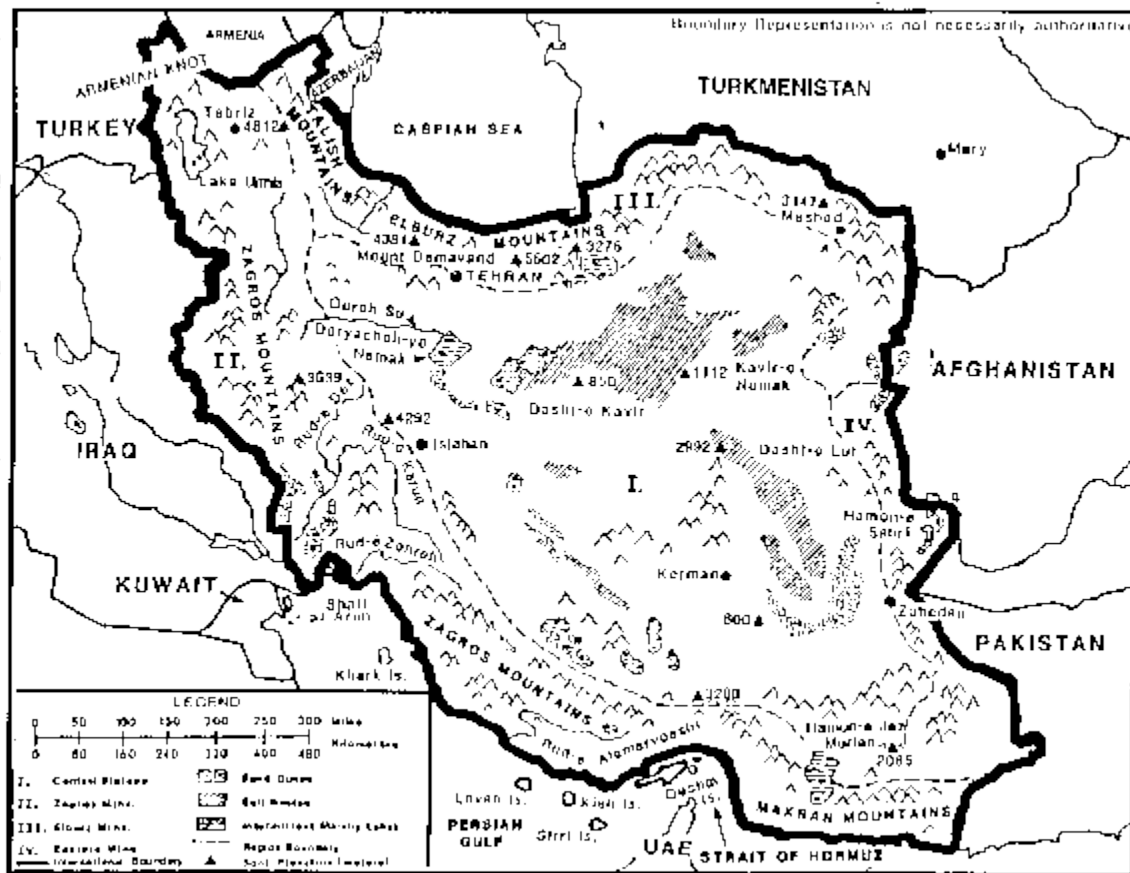


Figure 1-3. Terrain features and geographical regions of Iran.

(5) The eastern mountains experience no precipitation in summer with only a slight amount in winter and spring. Summer days are generally cloudless, whereas winter days are cloudy half the time. Some snow and occasional blizzards are possible in winter months.

(6) Two strong summer winds, the "shamal" in the northwest and "wind of 120 days" in the southeast intensify the already hot temperatures. The "wind of 120 days" blows regularly throughout the summer and is the most destructive of the two, reaching 160 km per hour at times.

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset. At the times shown in [Table 2](#), general outlines may be visible; but the horizon ordinarily cannot be distinguished.

Table 2. Light table.

TEHRAN, IRAN											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0715	0705	0635	0552	0513	0450	0452	0512	0536	0559	0626	0656
<u>SUNSET</u>											
1702	1732	1800	1826	1851	1915	1925	1909	1832	1749	1710	1651

5. Terrain. The country is generally situated on a high triangular plateau. This plateau is part of a larger one that includes parts of Afghanistan and Pakistan. According to geologists, the region was formed and continues to be influenced by the uplifting and folding effect of three giant blocks or plates--the Arabian, the Eurasian, and the Indian--pressing against each other. Subterranean shifts produce numerous faults in the earth's crust, and it is along or near these faults that the country's frequent and devastating earthquakes occur.

a. Terrain features.

(1) The central plateau is a barren, largely uninhabited area which occupies a series of closed basins with elevations of 600 to 1,500 m; mostly surrounded by mountains. The interior of the plateau is partly covered by deserts called "dasht," which are among the driest and most barren in the world. Black, muddy, salt marshes called "kavirs," which are separated by barren hills and mountains, are also found in the interior of the plateau. In summer the kavirs become dry causing the salt to crystallize, crack, and upturn into jagged edges, making the area very dangerous for travel. In the winter months when the kavirs are wet, they become quagmires and will halt vehicles, animals, or personnel traffic. The desert is an extensive, arid basin with large expanses of sand dunes crossed by intermittent streams draining into the kavirs. Dasht-e Kavir and the Dasht-e Lut are the most prominent terrain features in the area and are devoid of inhabitants and vegetation. This region is commonly called "the dead heart of Iran." Ironically, the foothills of the surrounding mountains allow habitation, and much of the cultivation of the country is found here. Winter rains flowing from the foothills provide well water for the towns and villages. The high salt content these streams, however, causes the water supply to be of poor quality. The Hamun-e Jaz Murian, a large fresh water lake in the Southwest, exists only during the winter.

(2) The high, rugged Zagros Mountains extend from the Armenian Knot in the extreme northwest and follow the western border town to and along the Persian Gulf, where they join the Makran Range near Pakistan, in the northwest, the elevation varies from 2,100 to 4,100 m with steep and partly forested slopes containing intermittent lowland basins. Lake Urmia is located in one of these basins. Its saline composition is the result of the presence of highly salty soil and the absence of an outlet. Further south, mountains form

parallel, dome-like ridges which are oriented northeast to southwest and vary in elevation from 2,500 to 4,000 m. These ridges are separated by deep, narrow, parallel valleys containing mostly perennial streams. The slopes are covered by open shrub forests, and the entire area is sparsely populated. Where the Zagros Mountains join the Makran range in the southern part of Iran, the combined ranges generally run east to west with elevations up to 1,000 m. Most valleys traverse mountains and drain into the Gulf of Oman where a narrow coastal plain stretches along the entire area. Water is generally plentiful all year in the northern portions of the mountains. Numerous streams in this area have fresh water much of the year but may become dry in summer. Wells and water storage cisterns are in or near populated areas. In the southern part of this area, most streams are intermittent, with fresh water becoming salty in the upper parts of the streams and becoming contaminated downstream. Fresh water is scarce along the coast.

(3) The Elburz and Talish Mountains located in the north extend into Afghanistan and have elevations from 2,100 to 3,000 m; in the northeast elevations exceed 4,400 m. Most valleys are narrow and steep-sided. Mount Damavand, an inactive volcano northeast of Tehran, is Iran's highest peak at 5,602 m. The streams draining towards the Caspian Sea flow most of the year, whereas streams draining towards the interior along the southern slopes are generally intermittent. The Caspian lowlands are flat to gently rolling, with dissected plains to the north of the Elburz Mountains. Streams, which are broad and slow-flowing, primarily empty into salt marshes along the coast. Numerous ditches and wide, shallow canals draw water from the streams for irrigation. Most of the area is densely populated; and portions of it are heavily cultivated, with natural vegetation consisting of grass, shrubs, and marsh weeds. The water of the Caspian Sea is drinkable in most places but is usually bitter, and well water on the east coast of the Caspian is brackish.

(4) The eastern mountains consist of hills and high rugged mountains with deeply cut valleys. Elevations can range from 1,200 to 2,750 m. The crest line is generally more than 460 m above adjacent basins and valley floors. Major streams through the valleys flow much of the year. Vegetation consists mostly of thorny shrubs 1 to 2 m high.

NOTE: See [Table 3](#) for a general evaluation of trafficability.

b. Urban areas.

(1) The urban sector has grown at a rate three times that of the rural sector. Fifty percent of the population live in urban localities (areas with a population exceeding 5,000). Tehran, the capital, is located at the foot of the Elburz Mountains, a site identified in ancient times as the intersection between the silk route to China and the north-to-south route between the Caspian Sea and the Persian Gulf. Tehran is the industrial center of the country with specific immigration limits on its growth.

(2) Since the mid-1970s the government has been actively seeking an improved distribution of population and decentralization of economic activity. Large industrial centers are being established in Isfahan and Meshed with smaller ones near the cities of

Kerman and Zahedan. Since the Khomeini takeover of the government, construction and industrial activities have not been restored to their prerevolutionary levels. This production lag has retarded the growth of the industrial centers, and their development status is presently unknown.

(3) Most of rural Iran is made up of farm villages, localities with populations of 50 or more people. Smaller populated areas are known as hamlets. Compared to the urban dwellers, the standards of living of those in the rural areas are lower, resulting in the desire of many to migrate to the urban areas. Little is known of the effect the new government has had on living conditions in the rural areas.

Table 3. Trafficability.

REGION	TRACKED VEHICLES	WHEELED VEHICLES	REMARKS
Central Plateau	Generally unrestricted except by local conditions. Rocky plains will slow cross-country movement; salt flats are impassible when wet; foothills offer best ground for Maneuver.	Poor, except in foot hills surrounding the central region. Rocks and salt crusts will destroy tires during cross-country movement. Poor existing road systems.	See FM 90-3 Desert Operations
Mountains	Barrier-type mountains restrict crossing traffic to existing roads and passes, which leave little room for maneuver. Roads may be easily blocked or defended. Mountain valleys allow channelized movement, but control of high ground will be necessary for large-scale operations.	Poor, except on existing road system. Road use will be dependent on control of surrounding terrain.	See FM 90-6 , Mountain Operation
Caspian Lowlands	Good trafficability with occasional need for fording or	Good trafficability both cross-country and by existing road	Good conditions within the compartmented

bridge deployment systems.Occasional area. Poor for east-west axis bridging. access to movement from interior. shoreline to Elburz Mountains generally unrestricted. Mountains hinder access to interior.

c. Coasts and beaches. The length of the Iranian coastline is 3,180 km and includes 676 km of island coastline. Iran claims 12 nautical miles (nm) as the limits of its territorial waters with fishing limits extending to 50 nm. The territorial limit overlaps that of Oman in the Strait of Hormuz. The Caspian Sea, the worlds largest land-locked body of water, has 630 km of coastline within Iran's borders. Due to the decline of the water level, now 28 m below sea level, the coastal plain is the former sea floor. Coast and beach access are further discussed in [Table 4](#).

Table 4. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Caspian Sea	These beaches offer almost unrestricted restricted access to the Caspian Lowlands; the extensive plains provide room for deployment.	Beaches are inaccessible except to forces on the Caspian Sea, which is bordered only by Iran, Azerbaijan and Turkmenistan.
Persian Gulf	Narrow beaches are overlooked by the parallel mountain ranges which ring Iran and severely restrict access to the interior. Coastal access to the interior is facilitated only in locations identified by major settlements or cities. The shelving beaches of the alluvial plain of the Tigris-Euphrates River system are accessible to amphibious forces, but extensive marshes and coastal flats restrict large scale movement to established roads and to the foothills of the western slopes of the Zagros Mountains.	

Arabian Sea	Same as for the Persian Gulf, except that forces landing in this area are at least 1,000 km from the key economic and political areas of Iran.
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6. LOCs. During the 1970s there was extensive growth in the transportation and communications sectors. Since the revolution there has been little investment in expansion and maintenance of the transportation and communications systems. Low-maintenance levels on roads and railways have led to a reduction of efficiency in some of the existing routes. Only a limited number of improvement projects are in operation.

a. Roads. During the 1970s the extensive catch-up effort in the road system proved to be difficult and costly due to the size of the country and the rugged terrain. Emphasis was placed on linking the major population centers and economic areas. While areas without roads or modern transportation exist in Iran, its primary population areas are connected but lack sufficient feeder roads. In addition to the 33,000 km of surfaces roads (many of which are of unreliable quality), there are more than 50,000 km of roads with surfaces ranging from reasonable to extremely poor quality. There are two major highways. The A1, runs for 2,089 km from Bazargan on the Turkish border, through Tehran, to the Afghanistan border, and the A2 that runs for 2,473 km from the Iraqi border to Mir Javeh on the Pakistan border. Other roads link the main population centers. [Table 5](#) identifies the road types. Main roadways and lengths are identified in [Table 6](#) and depicted in [Figure 1-4](#). The road from Tehran to the Persian Gulf is the most extensively used corridor, accounting for approximately half of all road traffic.

Table 5. Road network.

<u>TYPE</u>	<u>LENGTH</u>
Total	158,000
Paved	93,378 km
Unpaved including	64,622 km
Gravel and crushed stone	
Improved earth	
Unimproved earth	

Table 6. Roadways.

MAIN ROUTES	DISTANCE	REMARKS
Tehran-Qom-Isfahan-Yazd Kerman-Zahedan	1,300 km	None
Shiraz-Ahvaz-Abadan	650 km	7% road grade from Shiraz W from 150 km
Qom-Arak-Dezful-Ahvaz-Abadan	890 km	None
Qom-Borujerd-Hamadan	325 km	None
Tehran-Qazvin-Kermanshah-Baghdad	934 km	None
Abadan-Basra (Iraq)	50 km	None
Tehran-Qazvin-Tabriz-Jolfa	717 km	None
Tabriz-Ardabil-Astara	275 km	7% road grade from Ardabil to Astara
Tehran-Meshed	859 km	None
Meshed-Zahedan-Chah Bahar	1,512 km	None
Meshed-Herat (Afghanistan)	370 km	None
Kerman-Bander Abbas	490 km	7% road grade through highest mountains
Bandar Abbas-Shiraz-Bushehr	890 km	Bushehr to Shiraz 7% road grade

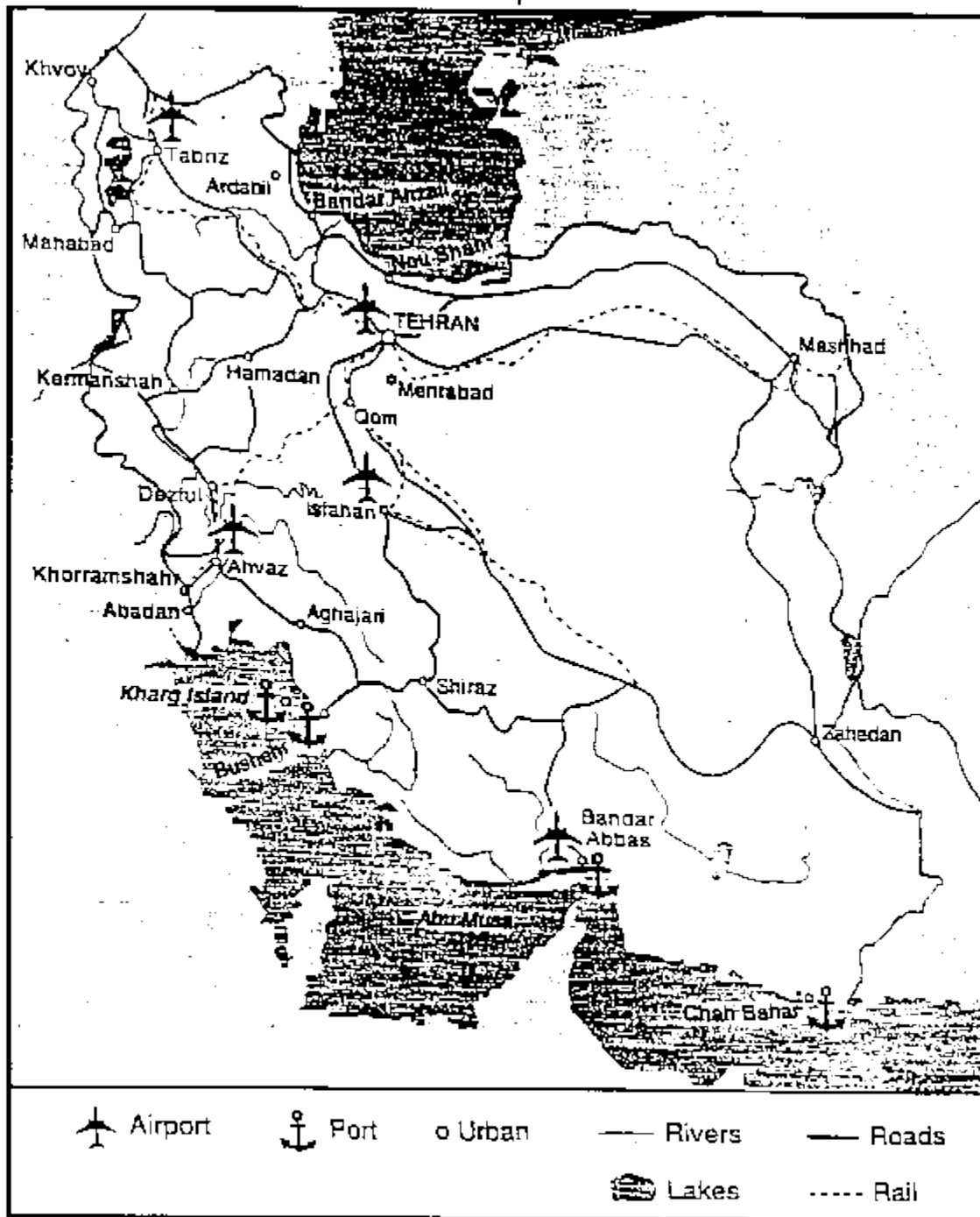


Figure 1-4. Main roadways.

b. Railroads. The Iranian State Railway faces the same problems as noted for roadways. [Table 7](#) identified the railroad network; [Table 8](#) identifies the main railway routes; and [Figure 1-4](#) depicts the rail network.

Table 7. Railroad network.

<u>TYPE</u>	<u>REMARKS</u>
Rail Headquarters	Iranian State Railway Tehran, Iran
Total track	7,286 km
Standard gauge track	1.43 m 7,192 km
Broad gauge track	1.67 m 94 km
Motive power	523 diesel locomotives 8 electric
Rolling stock	916 passenger coaches 12,898 freight cars.

Table 8. Main railway routes.

MAIN ROUTES				
Bandar Turkman-Tehran	Standard	1,392 km	Trans-Iranian Railway	
Bandar Khomeini				
Tehran-Khorremshahr	Standard	937 km	None	
Tehran-Gorgan	Standard	499 km	None	
Tehran-Tabriz	Standard	736 km	Linking with the Azerbaijan Railway	
Tehran-Semnan-Meshed	Standard	812 km	None	
Tehran-Qom-Kerman	Standard	1,160 km	When completed, it will be an intercontinental line linking Europe and Turkey with India	
Zahedan-Pakistan border	Broad	92 km	None	
Meshed-Ashkabad (USSR)	Standard	230 km	None	
Tabriz-Turkey border	Standard	139 km	None	
Tabriz-Jolfa	Standard	26 km	Azerbaijan Railway, electrified	
Bafq-Bandar Abbas	Unknown	730 km	Under construction	

c. Ports. Iran's principal ports are Abadan, Bandar Abbas, Bandar Khomeini, Bandar Shahid Rejaie Chah Bahar and Kharg Island. [Table 9](#) provides a list of Iranian ports and their

capabilities. During the Iran-Iraq war, the ports located in the northern portion on the Persian Gulf were subjected to air attacks. Karg Island was extensively bombed, and sporadic attacks have occurred at other ports. Liner services are handled by The Islamic Republic of Iran Shipping Lines. [Figure 1-4](#) identified the port locations. In 1988, Iran announced plans to spend US\$200 million the construction of six multi-purpose ports on the Arabian and Caspian Seas, while at the same time repairing ports that had been damaged during the war with Iraq. The main oil terminal at Kharg Island has been repaired and is now able to load 5.5 million barrels a day. Plans exist for a six to eight million barrels a day capacity. Repairs are in progress in the main ports of Bandar Abbas and Chah Bahar (on the Caspian Sea). In December 1993, Tehran announced that salvage experts had cleared 210 ship hulks from Khorramshahr harbor and the Karun river at a cost of US\$3.3 million. Iran claims that the port is now operational.

d. Air transportation. The international airport at Abadan was seriously damaged during the war with Iraq. The principal international airport of Iran is now Mehrabad, in Tehran, but there are still over 180 usable airports around the country, at least 80 of which have permanently surfaced runways (see [table 10](#)). In early 1992, the government announced that 20 airports would be modernized and that 12 new airports would be built. [Table 11](#) provides a list of IRAN's airfields

e. Water transportation. Approximately 904 km of waterway systems are located in Iran. The best navigable waterway is the 130 km Shatt al Arab inland waterway (under dispute between Iran and Iraq) and the adjacent Rud-e Karun (Karun River), which is navigable for 161 km ([Figure 1-6](#)). Daily motorboat and cargo services are available on Lake Urmia. This service consists of tugs and barges to carry goods and passengers between Sharafkhaneh and Golmankhaneh.

f. Pipelines. The pipeline system is utilized mainly for the movement of petroleum products and natural gas. [Table 12](#) lists the pipeline network. The locations of the major oil and natural gas pipelines are depicted in [Figure 1-6](#).

Table 9. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Abadan	Anchorage is available in five anchoring berths and there are several mooring buoys in the river. A number of tanker berths are available and port facilities include 3-ton cranes.
BandarShahid Rejaie	The port is really an extension of Bandar Abbas. Two berths are available. Covered storage area is available and container, roll-on/roll-off, bulk cargo and tanker vessels can all be handled. Further expansion of the port is planned, including improved road and rail connections.
Char Bahar	This new port has four general cargo berths, with available covered storage space, and large container facilities. The port is to be further

Bandar Abbas	<p>developed. Planned improvements include the construction of a railway line to link the port with the northeast of the country.</p> <p>The artificial harbor of the port contains six quays and is protected by breakwaters. Covered storage space is available and facilities include 20 cranes, three mobile cranes, tractors, trailers and fork lifts. Ore, tanker and bulk cargoes can be handled.</p>
Bandar Khomeini	<p>The port has a large covered storage area, two floating cranes, 45 cranes of a maximum capacity of 55 tons and 37 fork lifts. There is container capability and roll-on/roll-off vessels can be handled. Ore and bulk cargo vessels can also be accepted and a petrochemical facility is under construction. Tugs are available for berthing and unberthing.</p>
Kharg Island	<p>Vessels anchor outside the port and accommodation takes the form of a T-shaped jetty. The jetty, with 10 berths, can handle large tankers. Two further berths are located as the Sea Island Terminal and the Darius Terminal takes oil tankers. The Khemco Terminal accepts tankers carrying sulphur and liquefied petroleum gas.</p>

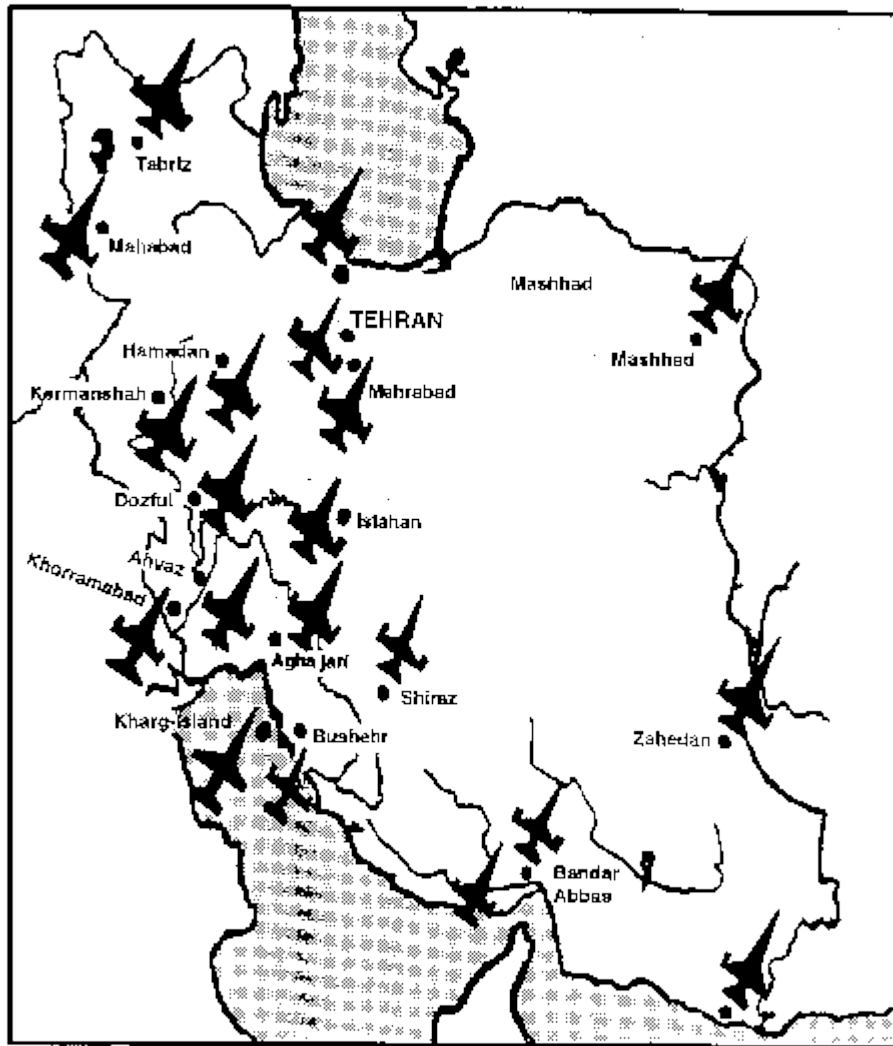


Figure 1-5. Airbases.

Table 10. Air transportation network.

<u>AIRFIELDS</u>	214 (180 usable)
Runway type	
Permanent surface	80
Unpaved fields and usable airstrips	59
Unusable airstrips	28
Runway length*	
Over 3,600 m	17
2,440-3,659 m	16

1,220-2,439 m	70
---------------	----

Under 1,220 m	39
---------------	----

*Runway lengths are for paved and unpaved usable airfields only.

Table 11. Airfields.

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Abadan International	Major civilian aviation terminal; 5.5 km NW of Abadan on the Shatt al Arab (Water of the Arabs); one 3,100 m and one 2,250 m asphalt runway; used by domestic and international commercial as well as Iranian Air Force aircraft (seriously damaged during the Iran/Iraq war).
Agha Jari	Oil company field; 3.2 km W of Agha Jari; one 2,135 m asphalt runway; sited on a flat plain; used by oil company aircraft.
Ahvaz	Civil aviation field; 119 km NNE of Abadan; one 3,350 m asphalt runway; sited on level terrain; used by domestic, oil company, and gendarmerie aircraft.
Birjand	Civil aviation field; 5.5 km ENE of Birjand; 128 km W of Iran/Afghanistan border; one 2,250 m asphalt runway sited in a mountain valley; used by domestic commercial aircraft important link between Tehran and the eastern border.
Bushehr	Civil/military field; 5.5 km S of Bushehr on a small peninsula; one 3,275 m and one 3,325 m asphalt runway; used by civil and military aircraft; major airfield, important for defensive fighter operations; largest military base in Iran.
Chah Bahar	Military facility; 28 km NW of Chah Bahar; one 3,850 m and one 3,025 m asphalt runway; sited on a sandy coastal plain; used by Iranian Air Force fighter aircraft.
Dezful highway strip	Military field; 19.5 km W of Dezful; one 3,050 m asphalt runway; sited in flat area; used as emergency fighter dispersal/recovery strip.
Hamadan	Civil aviation field; 147 km NE of Kermanshah; one 2,325 m asphalt runway; sited in a wide valley; no further unclassified information.
Isfahan	Military field; 19.5 km NE of isfahan; two 4,400 m

	asphalt runways; sited in mountainous area; used by fighter aircraft of the Iranian Air Force; home of 8 th Fighter Wing, equipped with F-14s.
Kerman	Civil aviation field; 11.5 km W by S of Kerman; one 2,750 m and one 2,050 m asphalt runway; sited in a high valley; used by domestic commercial and Iranian military aircraft.
Khorramabad	Civil aviation field; 8.6 km SW of Khorramabad; one 2,375 m asphalt runway; sited in a high valley; used by domestic commercial, oil company and Iranian military aircraft.
Mashhad	Civil/military facility; 6.4 km SW of Meshed; 73 km WSW of Iran/CIS border; one 3,825 concrete runway; sited in a high, wide valley; major domestic airfield and transshipment point for cargo to Afghanistan; both Iranian Army and Air Force use the field, as well as Iranian gendarmerie; air defense surveillance radar installation.
Rasht International	Civil aviation terminal; 8 km NNE of Rasht; 19.5 km SSE of Bandar Anzali; one 2,300 m asphalt runway; sited on level terrain; used by domestic commercial aircraft.
Shiraz International	Civil/military facility; 9 km S of Shiraz; two 4,270 m asphalt runways; sited in a large valley; also known as Tadayon Air Base; no further unclassified information.
Tabriz	Civil/military facility; 8 km NW of Tabriz; one 3,660 m and one 1,900 m asphalt runway; sited on a level plain; no further unclassified information.
Tehran/Mehrabad	Now the principal international airport; 9 km W of the center of Tehran; two 4,000 m asphalt and one 560 m concrete runway; used by domestic and international commercial aircraft, as well as Iranian military aircraft; major maintenance facility and helicopter assembly plant; jet engine overhaul facility 2.7 km south of airfield; no further unclassified information.
Zahedan International	Civil aviation terminal; 4.5 km SE of Zahedan; two 4,260 m asphalt runways; sited in mountainous terrain; used by domestic commercial, air taxi, and gendarmerie aircraft.

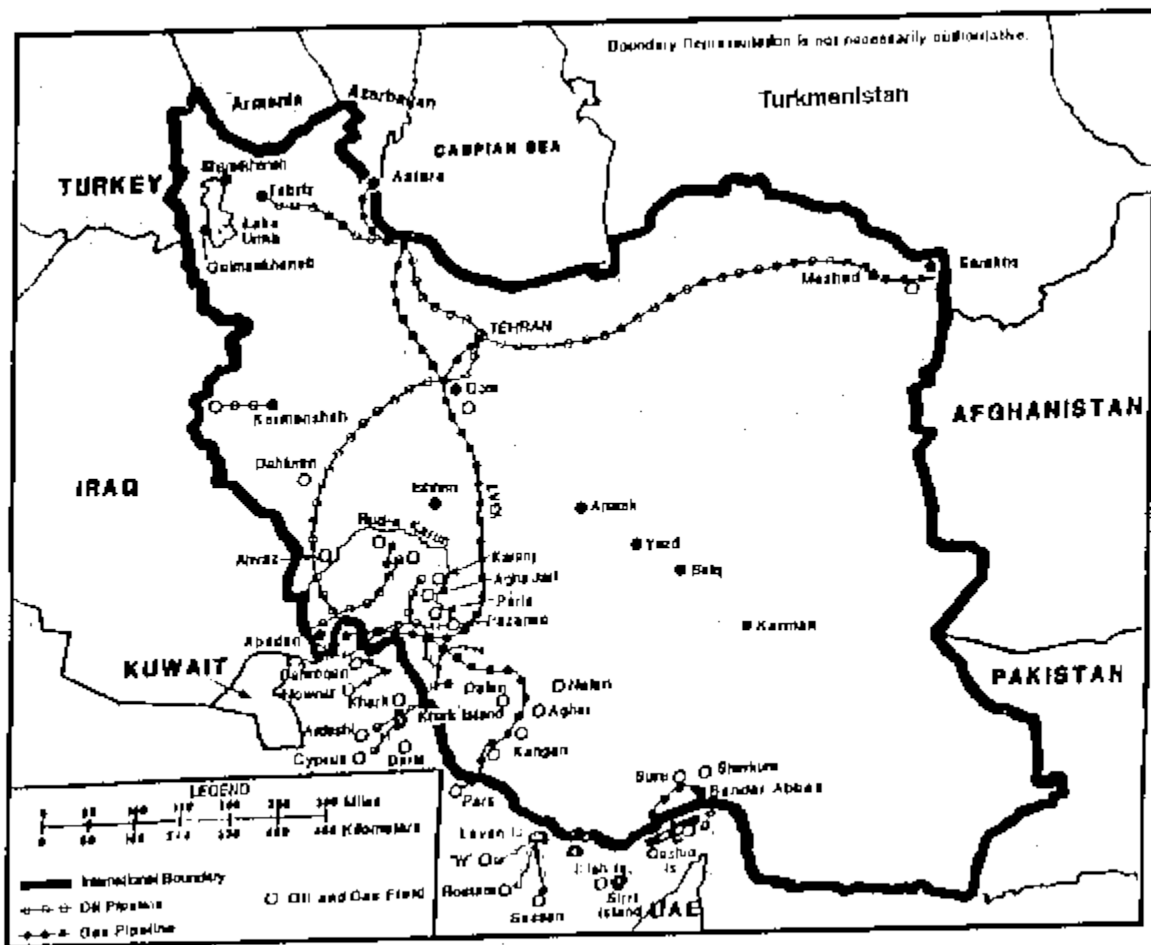


Figure 1-6. Water transportation and pipelines of Iran.

Table 12. Pipeline network.

<u>TYPE</u>	<u>LENGTH</u>
Crude Oil	5,900 km
Refined products	3,900 km
Natural gas	4,550 km
<u>MAJOR PIPELINES</u>	<u>DESCRIPTION</u>
Iranian gas trunkline	Natural gas pipeline, running from the southwest gas fields to the Turkmenistan border at Astara; spur lines branch off to the major Iranian cities; capacity at 1.6 billion cubic feet per day; possibility of connecting spur line to Turkey.

PART B: MILITARY CAPABILITIES OF IRAN

1. Historical background.

- a. For two decades after their defeat during World War II, the Iranian Armed Forces did not engage in regular combat. On several occasions between 1971 and 1977, however, Iran's military forces fought in small-scale operations. Limited as they were, these engagements enabled the largely untested forces to gain important combat experience. Regular border skirmishes between Iranian and Iraqi ground forces occurred during the early 1970s, with the most intense occurring between October 1972 and May 1974 when at least 10 major exchanges of fire took place. During the 1970s Iranian forces also fought in Oman where they gained additional combat experience. Iran was proud of its performance in Oman; the Dhofar Rebellion had been crushed, and the shah stated he would continue to preserve the status quo in the Persian Gulf region.
- b. In 1979, the Islamic Fundamentalism Revolution toppled the Shah of Iran and brought the Ayatollah Khomeini to power. Prior to this revolution, the Iranian Army had been a modern mechanized force with a strength of 300,000 personnel. When the revolution succeeded, the army rapidly collapsed as officers were retired, purged or executed and the desertion rate rose to 60%. Under the shah, the army had been deployed in 6 x divisions and 4 x specialized combat regiments, supported by more than 500 x helicopters and 14 x hover craft. An 85% readiness rate was usually credited to the force, although outside observers doubted this claim. Following the Revolution, the army became a second rate force as the Asdaran (Iranian Revolutionary Guard Corps (IRGC)) became the main fighting force in Iran.
- c. During the Gulf War, the U.S. strategy to attack from the West ensured that when the Iraqis, made to withdraw East and North back into Iran, had to pass through well positioned and flexible Coalition lines. Since U.S. policy at the time would not allow combat units to pass, this in effect prohibited any of the Iranian fighting equipment to return to Iran. This effectively destroyed 50% of the Iranian ground forces, ending Iran's domination of the region in terms of military strength.
- d. Also during the Gulf War, Iraq chose to fly a large number of its aircraft to Iran to protect them from being destroyed on the ground by coalition forces. After the war was over the U.S. forbid the return of these aircraft to Iraq. The irony is that Iran does not have the spare parts for these aircraft and therefore it is doubtful if any are still operational. And, with the arms embargos placed on Iran as a result of their sponsorship of terrorism, there is little hope for replacement of U.S. or Russian spare parts to repair these aircraft.
- e. Iran is a leading terrorist supporting nation (second only to Sudan) and is listed as such in both U.N. and U.S. foreign policy documents including a Presidential directive banning trade with Iran. Very strong U.S. intelligence evidence linked the bombing of the World Trade Center in New York City to Iranian fundamentalist-extremists. This evidence was used in the trials of those accused of the bombing, winning convictions. Iran is listed as one of the countries supporting SDT (Specially Designated Terrorists) and subject special U.S. TSRs (Terrorism

Sanction Regulations). Iran is also a major divisive element in the Middle East peace recess, and as such has additional sanctions placed on them.

2. Command and control. As faqih (religious jurist), the Ayatollah Khomeini was constitutionally designated Supreme Commander of the Armed Forces. He delegated the post of Commander-in-Chief to the President of the Republic, who could in turn delegate authority as required. Important decisions regarding defense policies are made by the Supreme Defense Council (SDC), which combined senior members of the armed services with senior members of the government.

a. According to Article 110 of the 1979 Constitution of the Islamic Republic of Iran, the faqih is empowered to appoint and dismiss the Chief of the Joint Staff, the Commander in Chief of the Pasdaran, two advisers to the SDC, and the commanders in chief of ground, naval, and air forces on the recommendation of the SDC. He is also authorized to supervise the activities of the SDC and to declare war and mobilize the armed forces on the recommendation of the SDC. As faqih, Khomeini, although maintaining the role of final arbiter, delegated the post of commander in chief to the president of the Republic ([Figure 1-7](#)).

b. In addition to specifying the duties of the commander in chief, Article 110 establishes the composition of the SDC as follows: president of the country, prime minister, minister of defense, chief of the Pasdaran, and two advisers appointed by the faqih. Other senior officials may attend SDC meetings to deliberate national defense issues. In the past, the Minister of Foreign Affairs, Minister of Interior, Minister of the Pasdaran and his deputy, Air Force and Navy Commanders in Chief, War Information Office director, and others have attended SDC meetings. The ground forces commander in chief, Colonel Seyyed-Shirazi, is a member of the SDC as a representative of the military arm for the faqih, whereas Majlis (Iranian Parliament) speaker Hojatoleslam Ali Akbar Hashemi-Rafsanjani is representative of the political arm for the faqih.

c. Iran's strategic planning and the establishment of its military and defense policies are the responsibilities of the SDC, which has representatives at operational area and field headquarters to provide political and strategic guidance to field commanders. SDC representatives may also veto military decisions. However, reports in 1987 indicated that SDC orders to regional representatives were modified to limit the heavy casualty rates caused by their inappropriate advice. Inexperienced nonmilitary religious advisers have seen their interference in purely technical matters dramatically curtailed.

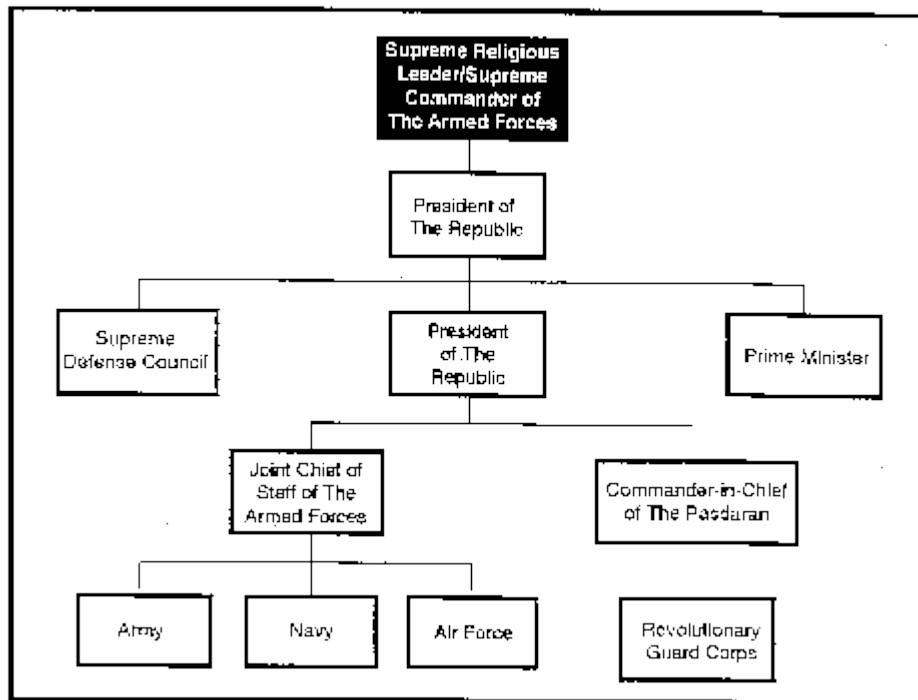


Figure 1-7. Iranian Armed Forces command structure.

d. The Urumiye (the town of Urmia, station for prerevolutionary officers of the 64th Infantry Division) reorganization proposals recognized the administrative separation of the services as part of Iran's political reality. Consequently as of 1987 there were two chains of command below the SDC, one administrative and the other operational. To some extent this dual chain of command existed because the revolutionary government had retained a modified version of the organizational structure of the Islamic Imperial Armed Forces (IIAF), which was modeled on the United States division of powers between the administrative functions of the service secretaries and the operational functions of the secretary of defense and chiefs of staff. In addition, the Islamic Republican Party (IRP) leaders wanted to limit friction between the regular military and the Pasdaran. According to Speaker Hashemi-Rafsanjani, the service commanders in chief, the minister of defense, and the minister of the Pasdaran were removed from the operational chain to avoid further friction between the two groups.

e. In 1987 the Ministry of Defense continued to handle administrative matters for the regular armed forces. The chain of command flowed from service Commanders in Chief and their staffs to intermediate-echelon service commanders to senior unit commanders (of division, wing, and fleet). Similarly, the Ministry of the Pasdaran handled the administrative affairs of the Pasdaran. The chain of command flowed from ministry staff officers to the senior commanders (operational brigades in the case of combat units). In the case of internal security units, the chain of command went from provisional general commanders (who were generals) to provisional commanders (who were colonels) to local commanders.

f. The Joint Staff of the Armed Forces, composed of officers assigned from the various services, the Pasdaran, the National Police, and the Gendarmerie, was responsible for all operational matters. Its primary tasks included military planning and coordination and operational control

over the regular services, combat units of the Pasdaran, and units of the Gendarmerie and National Police assigned to the war front. Joint Staff members were also empowered to integrate fully the regular and paramilitary forces in operational planning. The components of the Armed Forces Joint Staff were modeled on the United States joint and combined staff system ([Figure 1-8](#)).

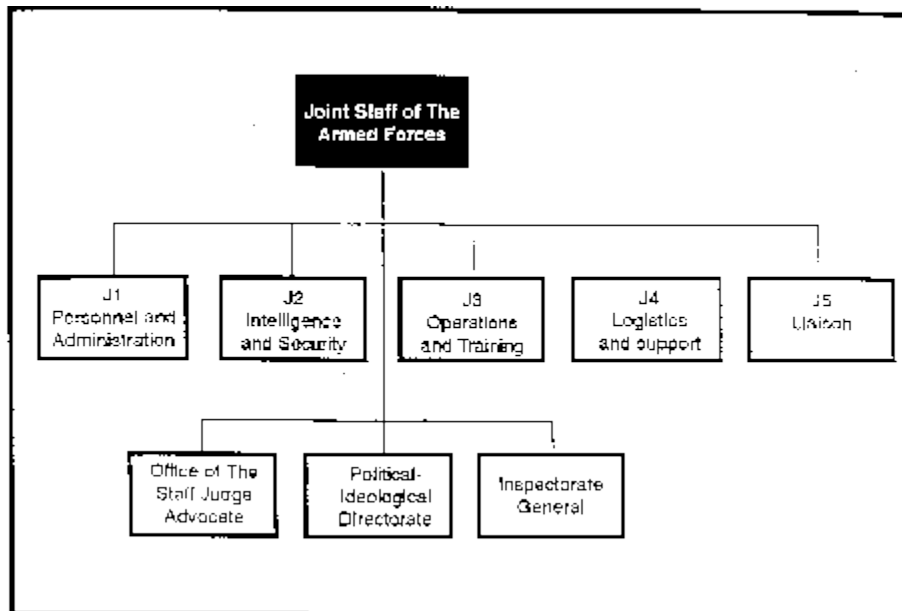


Figure 1-8. Joint Staff of the Iranian Armed Forces

(1) Staff members of J1--Personnel and Administration-- conducted planning and liaison duties with their counterparts at the ministries of defense, interior, and the Pasdaran (RGC). They also supervised budgeting and financial accountability and the preparation of operational budgets for Majlis (Iranian Parliament) approval for all the armed services.

(2) Personnel of J2--Intelligence and Security--carried out operational control for intelligence planning, intelligence operations, intelligence training, counterintelligence, and security for all elements of the armed forces. They also handled liaison with the komitehs (revolutionary committees) for internal security matters and with the intelligence branch to spy on the regime's adversaries (SAVAMA) for foreign intelligence.

(3) Staff members of J3--Operations and Training--conducted training, operational planning, operations, and communications. The operational planning and operations sections were further divided into eleven subsections for planning and coordination of the services, including: The Iranian Islamic Ground Forces (IIGF), IIGF Aviation, IIGF Chemical Troops, IIGF Artillery Troops, IIGF Engineer Troops, Iranian Islamic Air Force (IIArF), Iranian Islamic Navy (IIN), IIN Aviation, the Pasdaran, the Gendarmerie, and the National Police.

(4) Personnel of J4--Logistics and Support--coordinated and provided liaison for the services. Primary responsibility for logistics and supply rested with the services through the ministries of defense, interior, and the Pasdaran; collection and coordination of supplies and coordination of transportation to the war front, however, remained under the control of J4.

(5) Staff members of J5--Liaison--handled liaison and coordination with nonmilitary organizations and with those military organizations not covered by Joint Staff-level arrangements. Organizations covered by J5 included the Ministry of Defense, Ministry of Interior, Ministry of the Pasdaran, Office of the Prime Minister, Council of Ministers' Secretariat, SDC, Majlis (particularly the Defense and Foreign Affairs Committee), the Foundation for Popular Mobilization, the Foundation for the Disinherited, the Foundation for Martyrs (Bonyad-e Shahid), the Foundation for War Victims, and the Crusade for Reconstruction (Jihad-e Sazandegi or Jihad).

(6) The office of the Staff Judge Advocate provided legal counsel to the Joint Staff and facilitated liaison with the revolutionary prosecutor general and the military tribunal system of the armed forces.

(7) The Political-Ideological Directorate (P-ID) staff members operated the political-ideological bureaus of the Joint Staff components and the political-ideological directorates and bureaus of the operational commands. This office also developed and disseminated political-ideological training materials, in close cooperation with the Foundation for the Propagation of Islam and the Islamic associations of the services. Finally, P-ID members conducted liaison duties between the Joint Staff and the Islamic Revolutionary Court of the Armed Forces.

(8) Members of the Inspectorate General handled oversight functions over the staff components and liaison with the inspectors general of the operational commands. Special Office for Procurements staff members controlled and coordinated procurement of military equipment and supplies from foreign sources through the Ministry of Defense, the Ministry of the Pasdaran, the Ministry of Commerce and Foreign Trade, and the Central Bank of Iran.

(9) In general, operational area commands were subordinate to the Joint Staff, and each armed force component was subordinate to the operational area command in accordance with its own command structure. In 1987 there was only the Western Operational Area Command, which was responsible for the war with Iraq. Established to provide more effective control of wartime operations, this area may have been the precursor of the planned Northern, Southern, and Eastern Operational Area Commands ([Figure 1-9](#)).

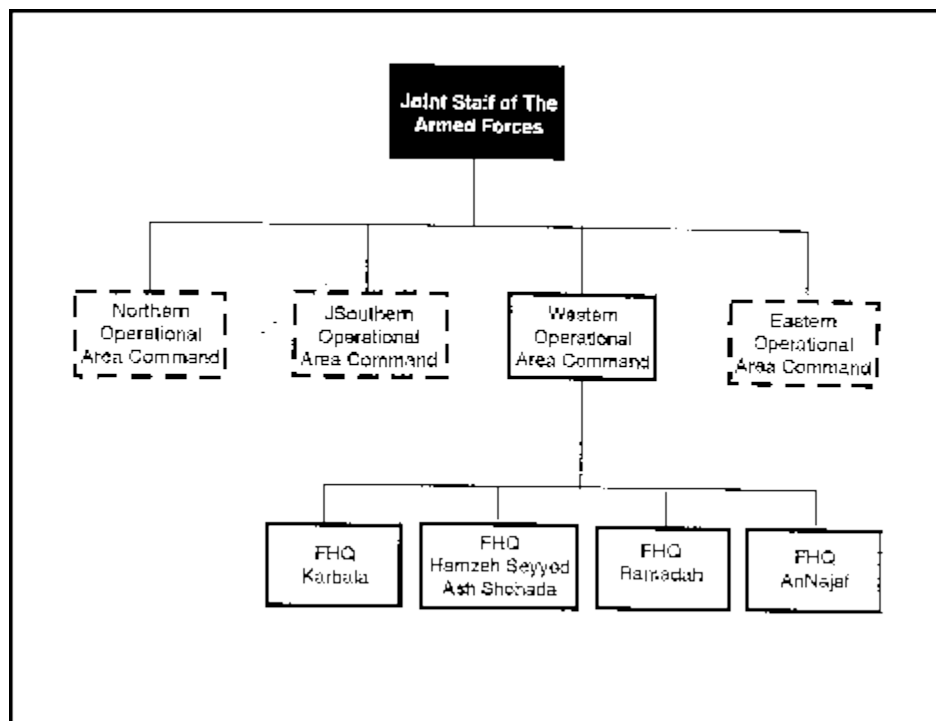


Figure 1-9. Operational area commands.

g. The Western Operational Area Command was similar in structure to the Armed Forces Joint Staff except that it was also the lowest operational echelon at which naval forces were integrated into combined-services operations and planning. Although operational area command Joint Staff members exercised operational control over all troops within their area, they were subject to several constraints. Generally speaking, Pasdaran, Gendarmerie, and National Police units operating in an internal security mission, particularly against insurgents, were detached from the operational area command and subordinated to the senior Pasdaran commander in the province in which they were engaged. Air and naval units continued to be partially controlled by their service commanders and responded to the Western Operational Area Command Joint Staff through specialized liaison staffs. The command of the operational area was further burdened by the presence at his headquarters of an SDC representative and a personal representative of Khomeini. Both of these influential individuals could effectively take any matter over the commander's head to a higher authority. In 1987 the SDC representative in the Western Operational Area Command was also the Pasdaran commander for the operational area command, a situation that further complicated the command and control system.

(1) Below the operational area command were four field headquarters (FHQ), code-named FHQ Karbala, FHQ Hamzeh Seyyed ash Shohada, FHQ Ramadah, and FHQ An Najaf. The FHQs were organized on the model of the Western Operational Area Command except that they did not have naval integration. Subordinate to each FHQ were from three to eight operational sectors. Each operational sector did not necessarily have its own air support unit.

(2) Additional echelons consisting of a commander and staff drawn from the Joint Staff of the participating FHQs could be created during major offensives. The functions of

these echelons was to overcome logistical shortcomings, concentrate and deploy forces as needed, and combine the services, particularly the naval forces, in offensive operations.

3. Iranian Armed Forces.

a. Ground forces. At present Iranian ground forces include Army and Revolutionary Guard Corps (RGC) Forces; however, it appears the Pasdaran are being integrated into the regular Army. The Army is organized as shown in [Table 13](#). Figures 1-10 - 1-12 show the force trends from 1975-1998 broken down by manpower and weapon type.

Table 13. Iranian Army units.

3 x Army headquarters
4 x Armored divisions each with 3 x brigades
7 x Infantry divisions
1 x Airborne brigade
1 x Special forces division with 4 x brigades
Some independent armored and infantry brigades including coastal forces
QODS Battalion in reserve is composed of ex-servicemen
12 x Surface-to-air missile (SAM) battalion with improved Hawk missile system

b. The Iranian air force numbers some 30,000 members, [Table 14](#) list the air force units. The American equipment cannot be assumed to be fully operational. Additionally, some of the 113 Iraqi combat aircraft flown into Iran during Desert Storm remain but they are probably not operational either. The mission of the air force is to conduct independent air attacks against enemy targets; to participate in the defense of the country against hostile air action; and to support the ground forces and navy by air strikes, reconnaissance, and air supply and transport. See [Figure 1-5](#) for locations of major air force bases.

Table 14. Air Force Units.

9 x Fighter ground attack (FGA) squadrons
7 x Fighter squadrons
5 x SAM squadrons with Rapier, Tigercat, HQ-2J, and improved Hawk missiles.

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c. Naval administrative headquarters is at Bandar Abbas on the Strait of Hormuz [table 15](#) list the Iranian naval equipment. There is a second operating base and dockyard at Bushehr. Other operating bases are at Kharg Islind (light forces), Chah Bahar (submarines) on the Indian Ocean

and there is a training base at Pahlavi on the Caspian Sea. Inshore patrol craft operate from forward bases at Farsi, Sirri and Abu Musa.

Table 15. Iranian naval equipment.

2 x Destroyers
3 x Frigates
7 x Amphibious landing ships
8 x Support ships

d. Revolutionary Guard Corps (RGC).

(1) RGC ground forces are organized in 13 x regional commands. They are loosely organized in battalions of no fixed size, grouped into 21 x infantry and 2 x armored divisions and many independent brigades, including infantry, armored, parachute, special forces (SF), artillery (including surface-to-surface missile (SSM), engineer, air defense (AD), and border defense units. The RGC serves independent or with the Army and has small arms and support weapons from the Army. Furthermore, the RGC ground forces control the Basij (Mobilization of the Oppressed) during civil disturbances.

(2) RGC naval forces (strength unknown) control 5 x island bases to include Al Farsiya, Halul (oil platform), Sirri, Abu Musa, and Larak. These forces have 40 x Swedish marine boats and control coast defense elements including artillery and SSM sites.

(3) RGC naval forces include 3 Marine brigades.

e. Paramilitary forces.

(1) Known as the Popular Mobilization Army, this volunteer force would provide the bulk of the land forces personnel in the event of mobilization. There are about 1,000,000 men and women available in times of national emergency but they are armed only with small arms. The Basij is organized into regional battalions. There appear to be two types of battalions: Ashura and Gaith. The Tehran regime plans to incorporate the estimated 175 Khorasan tribes and clans into the Basij system. In late 1994, the Basij were noted as employing rank insignia and there is now thought to be a full rank structure up to the level of Brigadier General.

(2) Gendarmerie including the border guard element.

(3) Home guard, which is controlled by the RGC.

(4) Tribal guards. Some 40 x units are reported forming.

(5) Kurds. Kurdish Democratic Party armed wing (Pesh Merga).

f. Forces abroad. There are 2,000 RGC troops reported in Lebanon.

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g. Foreign forces. There were 400 foreign troops of the UN Iran/Iraq Military Observer Group (UNIIMOG) in Iran/Iraq from Austria (medical), Ireland (Military police), New Zealand (Air Force), and observers from 25 countries prior to Operation Desert Storm.

h. [Table 16](#) shows the Iranian armed forces strength.

Table 16. Iranian Armed Forces strength.

Force Trends in Iran - Part One						
Category/Weapon	1975	1980	1985	1990	1992	1998
Manpower						
Total Active	250,000	240,000	353,000	504,000	513,000	518,000
Regular	250,000	240,000	303,000	305,000	393,000	358,000
Revolutionary Guard	0	0	250,000	150,000	120,000	120,000
Reserve	300,000	400,000	350,000*	350,000*	350,000*	350,000*
Paramilitary	70,000	75,000	70,000+	57,000+	200,000	135,000
Army and Revolutionary Guard						
Manpower	175,000	150,000	300,000	443,000	445,000	450,000**
Regular Army Manpower	175,000	150,000	250,000	138,000	345,000	350,000
Reserve	100,000	400,000	350,000	350,000	350,000	350,000
Active Main Battle Tanks	1,160	1,735	1,750	500+	1,250	1,390
Total Main Battle Tanks	1,160	1,735	1,750	500+	1,250	1,410
AFV/Recon, Lt. Tanks	250	250	360	320	515	515
APCs	2,000	825	1,000	500+	550	550
Self Propelled Artillery	-	492	350	85+	289	289
Towed Artillery	650**	500	850	1,400+	1,995	1,995
MRLs	64	72	112	400+	654	659
Missiles	-	-	3,000+	3,000+	3,500	6,500
SSM Launchers	-	-	-	34	46	46
Light SAM Launchers	-	-	-	200	700	700
AA Guns	650	1,900	1,500	1,500	1,700	1,700
Air Force Manpower	60,000	70,000	15,000	35,000	18,000	18,000
Air Defense Manpower	-	-	-	-	12,000	12,000
Total Combat Aircraft	238	446	80	185	295	297
Bombers	0	0	0	0	0	0
Fighters/Attack	221	354	80	55-120	150	150
Fighters/Interceptor	0	77	20	15-60	115	114
Recon/PGA Recon	17	14	8	8	8	8
AEW CA/BBM	0	0	0	0	0	0
MR/MPA	0	0	0	5	6	6
OCU/CQIN/CCT	0	0	0	0	0	0
Other Combat Types	28	-	13	-	92*	30?
Transport Aircraft***	84	79	42	55	68	71
Tanker Aircraft	6	22	17	4	4	5
Total Helicopters	70	744	491?	434	609	609
Armed Helicopters****	-	205	100?	100	100	100
Other Helicopters*****	70	539	391?	334	509	509
Major SAM Launchers	-	-	-	40+	204	204
Light SAM Launchers	-	45	33	90	60	45+
AA Guns	-	-	-	-	-	-

Force Trends in Iran - Part Two

Category/Weapon	1975	1980	1985	1990	1995	1998
Total Naval Manpower	15,000	20,000	20,000	26,500	38,000	38,000*
Regular Manpower	15,000	20,000	20,000	14,500	20,000	20,000
Major Surface Combatants						
Missile	4	7	8	8	5	4
Other	7	8	2	2	2	0
Patrol Craft						
Missile	0	0	7	10	10	20
Other	23	7	7	19	28	26
Submarines	0	0	0	0	2	3
Mine Vessels	6	5	2	3	3-5	7
Amphibious Ships	0	2	4	7	8	8
Landing Craft****	14	15	?	?	17	17
Marines	(1,000)	(1,000)	(1,000)	(1,200)	(1,200)	(1,200)
Naval Guards	0	0	8,000?	12,000?	18,000	18,000
Naval Air	-	-	800?	800?	1,300	2,000?
Naval Aircraft						
Fixed Wing Combat	0	0	0	0	0	0
MR/MPA	0	6	2	(2-5)	(6)	(6)
Armed Helicopters/SAR	0	32	14?	9	9-11	9
Other Helicopters	35	24	8	-	-	-

Note: Equipment in storage shown as higher figure in range. Air Force totals include all helicopters, and all heavy surface to air missile launchers.

*Does not include well over one million potential reserves in the Basij.

** Iranian total for 1998 includes roughly 100,000 Revolutionary Guard actives in land forces and 20,000 in naval forces.

*** Includes all types of tube artillery weapons, 100 mm and above.

**** Includes navy, army, national guard, and royal flights, but not paramilitary.

***** Includes hovercraft

Adapted by Anthony H. Cordesman from interviews, International Institute for Strategic Studies, Military Balance (IISS, London); various data available from Jane's, Military Technology, World Defense Almanac, and Jaffee Center for Strategic Studies, The Military Balance in the Middle East (ICSS, Tel Aviv)

Iranian Land-Based Air Defense Systems			
<u>Country</u>	<u>Major SAM</u>	<u>Light SAM</u>	<u>AA Guns</u>
<u>Iran</u>	12/150 THawk	SA-7	1,700 Guns
	3/7 SA-5	HN-5	ZU-23, ZSU-23-4,
	45 HQ-2J (SA-2)	30 Rapier	ZSU-57-2, KS-19
	7 SA-2	FM-80 (Ch Crotale)	ZPU-2/4, M-1939,
		15 Tigercat	Type 55
<u>Iraq</u>	SA-2	Roland	6,000 Guns
	SA-3	SA-7	ZSU-23-4 23 mm,
	SA-6	SA-8	M-1939 37 mm,
		SA-9	ZSU-57-2 SP, 57 mm
		SA-13	85 mm, 100 mm, 130 mm
		SA-14	
		SA-16	
Estimated by Anthony H. Cordesman from the <u>IISS Military Balance</u> and interviews with various experts			

Table 16. Iranian Armed Forces strength (concluded).

LESSON 1

PRACTICE EXERCISE

Instructions

The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

1. Which time zone(s) is (are) used by Iran?
 - ☐ A. Alpha.
 - B. Bravo.
 - C. Charlie and Delta.
 - D. Delta and Echo.
2. Which area in Iran receives adequate precipitation?
 - A. In the eastern deserts.
 - B. In the southern Zagros Mountains.
 - C. In the Makran Mountains.
 - D. In the northwest and along the Caspian Sea.
3. Who is the delegated Commander-in-Chief in Iran?
 - A. Ayatollah.
 - B. President of the Republic.
 - C. Supreme Commander of the Republic.
 - D. Prime Minister.
4. What type units is a Qods battalion?
 - A. Composed of ex-servicemen.
 - B. Special forces.
 - C. Airborne.
 - D. Infantry.

5. Which summer winds in the southeast of Iran intensify the already hot temperatures?
- A. Shamal.
 - B. Winds of 120 days.
 - C. Sharqi.
 - D. Shlemihl.

LESSON 2

IRAQ

Critical Task: None

OVERVIEW

LESSON DESCRIPTION:

In this lesson, you will learn to describe the history, weather, terrain, and LOCs; and identify military capabilities of Iraq.

Terminal Learning Objective:

- TASK:** Describe the history, weather, terrain, and LOCs; and identify the military capabilities of Iraq.
- CONDITION:** You will be given extracts from CIA World Factbook 1997, DA Pam 550-31, [FM 34-72](#) (Coordinating Draft), [FM 44-30](#), USAITAC Order of Battle Handbook AIA-DS-1-90, USAITAC Order of Battle Handbook AIA-DS-2-90, 11th SFG Field Order of Battle handbook, NTC Handbook 100-91, USAIC&FH SupR TCSUCC, and the IISS The Military Balance 1990-1991.
- STANDARDS:** Description of the history, weather, terrain and LOCs; and identification of military capabilities of Iraq will be in accordance with CIA World Factbook 1997, DA Pam 550-31, [FM 34-72](#) (Coordinating Draft), [FM 44-30](#), USAITAC Order of Battle Handbook AIA-DS-1-90, USAITAC Order of Battle Handbook AIA-DS-2-90, 11th SFG Field Order of Battle Handbook, NTC Handbook 100-91, USAIC&FH SupR TCSUCC, and IISS The Military Balance 1990-1991.
- REFERENCES:** The material contained in this lesson was derived from the following publications:
- CIA World Factbook 1997.
- DA Pam 550-31.
- [FM 34-72](#) (Coordinating Draft).
- [FM 44-30](#).
- USAITAC Order of Battle Handbook AIA-DS-1-90.

USAITAC Order of Battle Handbook AIA-DS-2-90.

11th SFG Order of Battle Handbook.

NTC Handbook 190-91.

USAIC&FH SupR TSCUCC.

IISS The Military Balance 1990-1991.

Microsoft Encarta 98 Encyclopedia.

Milnet 1998 Website at <http://www.milnet.com/milnet/index.html>.

Jane's Sentinel Security Assessment.

The Gulf States and update Apr 98.

INTRODUCTION

This lesson is an attempt to treat in a concise and objective manner the military aspects of Iraq. [Part A](#) describes the history, weather, terrain, and LOCs which are still pertinent. However, [Part B](#), military capabilities, are somewhat changed after Operation Desert Storm. These factors should be considered in studying the lesson. Military equipment of Kuwait is in Subcourses IS3010 and IS3011.

PART A. HISTORY, WEATHER, TERRAIN, AND LOCs OF IRAQ

1. General Information. Iraq (ee RAHK) is an Arab republic in southwestern Asia which is slightly larger than California. The country is bordered to the north by Turkey, to the west by Syria and Jordan, to the south by Saudi Arabia, Kuwait, and the Persian Gulf, and to the east by Iran. [Figure 2-2](#) is a country outline of Iraq.

2. Statistical data of Iraq as of 1987 is as follows:

Name:	Republic of Iraq (Al-Jumhuriya-al-Iraqiya)
Capital:	Baghdad
Population:	22,219,289 (July 1997)
Area:	437,072 km ² as reported by Iraqi Government
Ethnic divisions:	75% Arab, 15-20% Kurdish Turkoman, Assyrian, or other 5%
Language:	Arabic (official) and Kurdish (official in Kurdish regions), Assyrian and Armenian
Literacy rate:	58% (1997 est) by outside observers, as high as 70% reported by the Iraqi Government

Religion:	97% Muslim (60-65% Shiite Muslim, 32-37% Sunni Muslim), 3% Christian or other
GNP:	\$ 38 billion (1993 est.)
Per capita income:	\$ 1,950/annum
Unit of currency:	Iraqi dinar (ID)
Exchange rate:	\$ 1 - .3109 ID
Time zones:	Three hours ahead of UTC; eight hours ahead of US Eastern Standard Time; time zone CHARLIE
Defense forces:	Army, Air Force, Navy, and paramilitary forces



Figure 2-1. Flag of Iraq

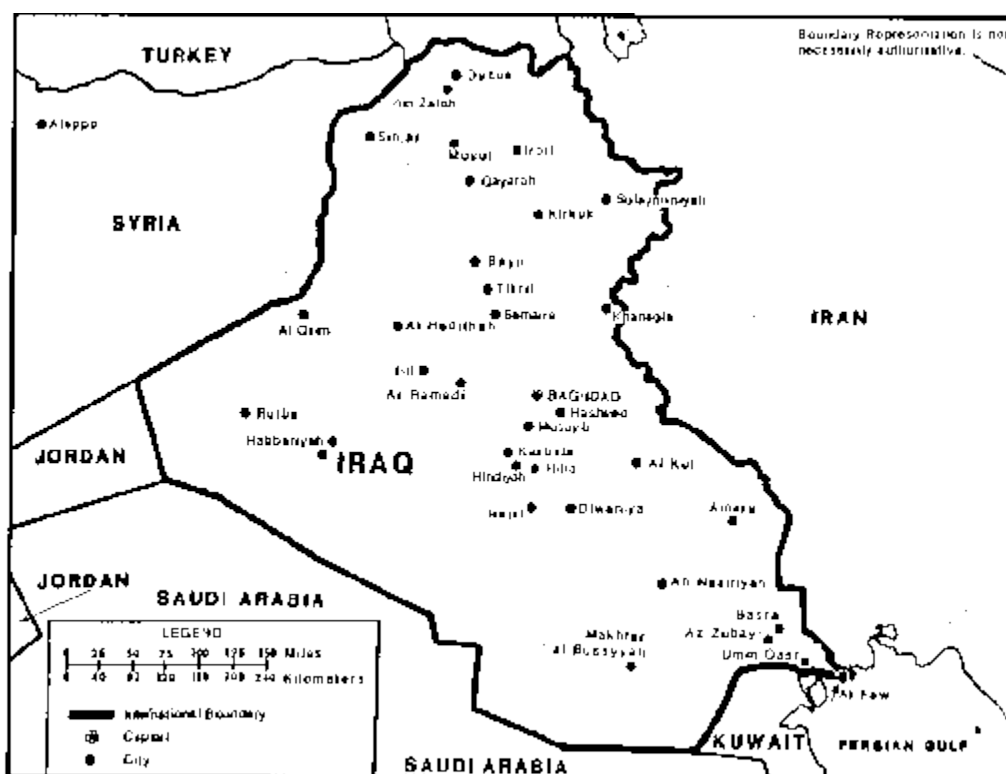


Figure 2-2. Iraq.

3. History.

a. Historical background.

(1) Ancient Mesopotamia, the "land between the waters," was located between the Tigris and Euphrates Rivers of Iraq. It is part of the "Fertile Crescent" and has been called by anthropologists as the "Cradle of Civilization," possibly the site of the Garden of Eden. One of the first civilizations of the world, Sumer, evolved here more than 5,000 years ago. The first Sumerians are believed to have been immigrants from the highlands of Turkey and Iran. As the area developed, migrations and invasions became more common and influenced the cultural make-up of the region. By the mid-24th century B.C., the Sumerians were overrun by the Akkadians and thus began the rising and falling of a long series of empires in the area. With the spread of iron new weapons of war were developed and the Kingdom of Ashur--or Assyrian, as it is usually called--from the northern part of this region began dominating its neighbors. After the Assyrians fell in the seventh century B.C. the Babylonians reestablished their empire in the region and they were followed by the Medes, Persians, Greeks, and Romans.

(2) Following the seventh century A.D., Islam became entrenched in what is now Iraq. Baghdad, the capital of the Abbasid Caliphate (Islamic Empire), was the leading city of the world for five centuries and was the acknowledged leader of the Arab and Muslim world. In 1258 Baghdad was devastated by the Mongols and was later occupied by the Ottoman Turks. After World War I, the Turks were driven from the area by the British. Britain then created a mandate from three former Ottoman provinces and called this new country Al Iraq (the origin), the name formerly applied to only the southern region of the province of Basra. In 1932, Britain gave independence to this mandate and Iraq became a sovereign, independent state. However, Britain still maintained troops in Iraq and greatly influenced the government.

b. Recent history.

(1) In 1933, Iraq's King Feisal died. His death coincided with political unrest and dissatisfaction with the government. In 1936, Iraq experienced its first attempted coup d'etat and between 1936 and 1941 there were six more abortive coup attempts. All of these attempted coups were motivated by personal goals rather than political issues. In January 1943, pro-British Iraq declared war on the World War II Axis powers (Germany, Italy, and Japan) under the terms of a treaty with Britain. In 1945 Iraq became a founding member of the League of Arab States. Postwar Iraq, however, did not regain the stature it enjoyed in the pre-World War II Arab world. After joining the United Nations (UN) in December 1945, Iraq bitterly opposed the UN partition of Palestine and in 1948 entered the war against Israel.

(2) In 1958 King Faisal II of Iraq was executed in a coup by army officers. The leaders of the new regime declared their nation a republic committed to a foreign policy of

nonalignment. Iraq's foreign policy, however, moved from a pro-West stance to one of friendly relations with the communist powers. Relations with the US were severed in 1967 after the US provided aid to Israel in the Six Day War.

(3) The Iraqi Baath (Resurgence) Party came to power through a coup in 1968 and Saddam Hussein became the number two man in the regime. By 1976 Hussein had in reality become the power in the regime and in 1979 he took complete control. The Baath regime closely parallels those that have existed since the overthrow of King Feisal II in 1958. The Government is controlled by Sunni Arab military elements who have succeeded in avoiding commitments to a political union with other Arab states. Hussein's Baath Party dominates both military and civilian communities.

(4) During the 1960s and 1970s Iraq had become increasingly more dependent on the former Soviet Union for military assistance. However, after the Soviets reneged on some military aid deals and provided inferior replacement equipment for war losses, the Iraqis began to improve relations with the West and decrease their dependence on the Soviets. During the late 1970s several border clashes with Iran increased tensions between the two countries. In 1979 Saddam Hussein expelled the Ayatollah Khomeini from Iraq, where he had been in exile since 1961. Removed from the seat of Shiite learning in Iraq, Khomeini vowed he would have Hussein's head brought to him on a platter. In February 1980 the Shah's caretaker's government fell and Khomeini returned to Iran via France vowing to spread the Islamic Revolution to the whole world. In September 1980, before Khomeini could consolidate his power, Iraq invaded Iran and the two countries were locked in war until September 1988, when a cease fire was agreed to, but no peace settlement has yet been achieved.

(5) In August 1990 Iraqi troops occupied Kuwait. The United Nations passed 12 resolutions and urged Iraq to leave Kuwait by 15 January 1991, but to no avail. United States and multi-national forces were rushed into Saudi Arabia in response to an urgent call from the rulers of Saudi Arabia and Kuwait. On 16 January 1991 the Gulf War started with thousands of bombing raids in an effort to evict Saddam Hussein and his Iraqi forces from Kuwait. On 23 February 1991 the ground war started; it ended in a US and multi-national forces victory after 100 hours fighting by ground forces. Kuwait was liberated and fighting erupted between Iraqi troops and Shiite and Kurd rebels.

(6) Hundreds of thousands of Kurdish refugees fled to Turkey and Iran. U.S. British, and French troops landed inside Iraq's northern border to set up refugee camps to protect another 600,000 Kurds from Iraqi government reprisals. Throughout 1992 Iraq came under increasing international pressure to eliminate its remaining weapons of mass destruction.

(7) In 1993 UN officials announced that they had completed dismantling Iraq's nuclear, biological, and chemical warfare capability, prompting calls by Iraq to end the UN-sponsored trade embargo. Again in October 1994 the U.S., Britain and France responding to another buildup of Iraqi troops along the border with Kuwait deployed

about 40,000 troops and more than 600 aircraft to the Persian Gulf region. Many analysts thought Iraq was trying to force the UN to lift its trade embargo against Iraq. A short while later, Iraq's soldiers were withdrawn from the border. In November Saddam Hussein signed a decree formally accepting Kuwait's sovereignty, political independence, and territorial integrity. The decree effectively ended Iraq's claim to Kuwait as a provincial territory.

(8) In 1994 Iraq continued its efforts to crush internal resistance with an economic embargo of the Kurdish-populated north and a military campaign against Shiite Muslim rebels in the south. The Shiites were quickly quieted, but the crisis in Kurdistan, which had long suffered from internal rivalries, continued. Kurds had often argued over land rights, and as their economic and political security deteriorated in the early 1990's, the conflicts escalated. In May 1994 supporters of the Patriotic Union of Kurdistan (PUK) clashed with supporters of the Kurdistan Democratic Party (KDP), leaving 300 people dead. Over the next two years the UK and KDP fought several more times, eventually devolving into a state of civil war. In August 1996, leaders of the KDP asked Iraqi president Saddam Hussein to intervene in the war. Hussein sent at least 30,000 troops into the UN-protected Kurdish region, capturing the PUK stronghold of Irbil. The KDP was immediately installed in power. The U.S. responded with two missile strikes against southern Iraq, but in early September Iraq again helped KDP fighters, this time taking the PUK stronghold of As Sulaymaniyah.

4. Weather.

a. Climate.

(1) The Iraqi climate is similar to that of the extreme southwestern United States with hot, dry summers, cold winters, and a pleasant spring and fall ([Table 17](#)). Roughly 90% of the annual rainfall occurs between November and April, most of it in the winter months from December through March. The remaining six months, particularly the hottest ones of June, July, and August, at approximately 102° F (32° C), are dry. The summer months are marked by two kinds of wind phenomena. The southern and southeasterly "Sharqi," a dry dusty wind with occasional gusts up to 80 km per hour, occurs intermittently from April to early June and again from late September through November. The wind is often accompanied by violent dust storms that may rise to several thousand meters in altitude, causing hazardous flying conditions. From the north and northwest comes the "Shamal," a steady prevailing wind from mid-June to mid-September. Very dry air which accompanies the shamal permits intensive sun heating of the land surface but also provides some cooling effect. The influence of the Persian Gulf on the climate of Iraq is very limited. Near the gulf the relative humidity is higher than in other parts of the country.

Table 17. Annual temperatures (° C).

REGION	<u>WINTER</u>		<u>SUMMER</u>		<u>EXTREMES</u>	
	MIN	MAX	MIN	MAX	MIN	MAX
Western/Southern Desert	9°	16°	20°	40°	-14°	49°
Rolling Upland	3°	13°	25°	40°	-12°	49°
Tigris/Euphrates Delta	4°	18°	25°	40°	-7°	51°
Mountains	-4°	5°	15°	25°	-30°	42°

(2) In the western and southern desert region, the climate is characterized by hot summers and cool winters. This region also receives brief violent rainstorms in the winter that usually total about 10 centimeters (cm). Most nights are clear in the summer, and about one third of the nights are cloudy in the winter.

(3) In the rolling upland (foothill) region there is basically no precipitation in the summer and some showers in the winter. The winter rainfall normally averages about 38 centimeters (cm). The nights are generally clear in the summer and in the winter dense clouds are common about half of the nights.

(4) The alluvial plain of the Tigris and Euphrates Delta in the southeast receives most of its precipitation accompanied by thunderstorms in the winter and early spring. The average annual rainfall for this area is only about 10 to 17 cm. Half of the days in winter are cloudy, and in the summer the weather is clear most of the time.

(5) In the mountains of the north and northeast the climate is characterized by warm summers and cold winters. Precipitation occurs mainly in winter and spring, with minimal rainfall in summer. Above 1,500 m, heavy snowfalls occur in the winter, and there is some thunderstorm activity in the summer. Annual precipitation for the whole region ranges from 40 to 100 cm. Few nights are cloudy in summer and about half of the days are cloudy in winter.

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset. At the times shown in [Table 18](#), general outlines of the horizon may be visible but probably cannot be distinguished.

Table 18. Light table.

<u>BAGHDAD, IRAQ</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0706	0654	0631	0551	0515	0454	0456	0515	0536	0557	0621	0648
<u>SUNSET</u>											
1706	1734	1759	1823	1845	1907	1916	1902	1828	1747	1711	1655

5. Terrain. Iraq is divided into four main terrain zones or regions: the desert in the west and southwest; the rolling upland between the Tigris and Euphrates rivers (in Arabic, the Dijhis and Furat, respectively); the highlands in the northeast; and the central and southeastern alluvial plain through which the Tigris and Euphrates flow (the Tigris Euphrates Valley) ([Figure 2-3](#)).

a. Terrain features.

- (1) The desert zone constitutes 38% of the total land area and lies west and southwest of the Euphrates (Nahr al Furat) River; it is a part of the Syrian Desert. The region is sparsely populated and consists of a wide stony plain interspersed with rare sandy stretches. A widely ramified pattern of wadis runs from the border to the Euphrates. Some wadis are more than 400 km long and carry brief, but torrential floods during the winter rains.
- (2) The uplands region, between the Tigris north of Samarra and the Euphrates north of Hit, is known as Al Jazirah and is part of a larger area that extends westward into Syria, between the two rivers, and into Turkey. Water in the area flows in deeply cut valleys. Much of this zone may be classified as desert.
- (3) The northeastern highlands begin just south of a line drawn from Mosul to Kirkuk, and they extend to the borders with Turkey and Iran. High grounds, separated by broad, undulating steppes, give way to mountains ranging from 1,000 to 4,000 m near the borders. Except for a few valleys, the mountain area proper is suitable only for grazing in the foothills and steppes; adequate soil and rainfall make cultivation possible. Iraq's largest oil fields are located near Mosul and Kirkuk.

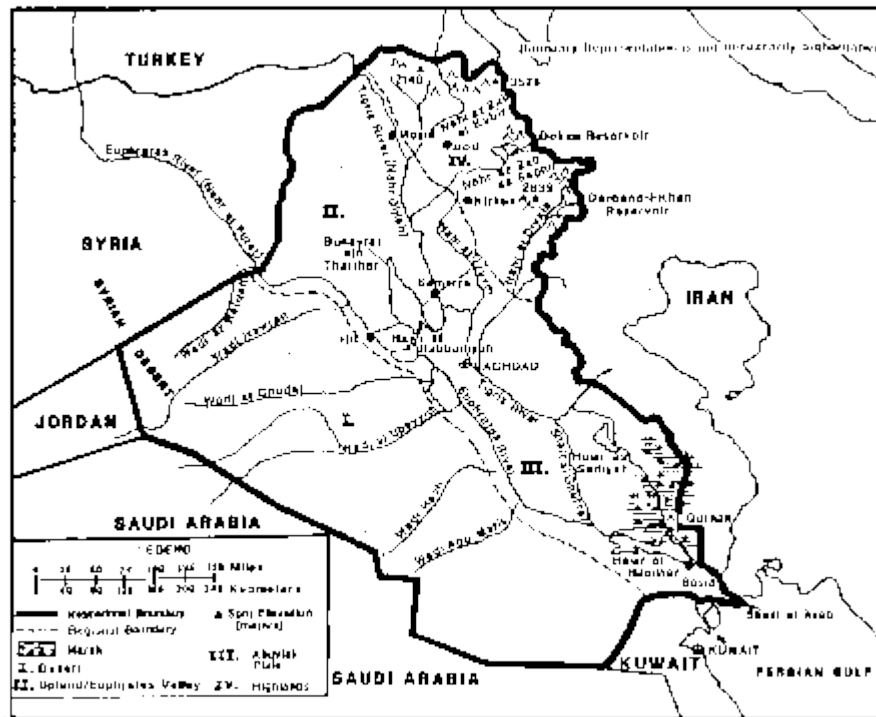


Figure 2-3. Terrain features and natural regions of Iraq.

(4) The alluvial plain begins north of Baghdad and extends to the Persian Gulf. The Tigris and Euphrates rivers lie above the level of the plain in many areas in this region. The whole area is a delta interlaced by the channels of the two rivers and by irrigation canals. Intermittent lakes, fed by the rivers in flood, also characterize southeastern Iraq. A fairly large area just above the merging of the two rivers at Al Qurnah and extending east of the Tigris beyond the Iranian Border is marshland, known as the Hawr al Hammerar. Much of it is permanent marsh, but some parts dry out in early winter, and other parts become marshland only in years of great floods.

NOTE: General trafficability is depicted in [Table 20](#).

b. Urban areas.

(1) Within the last 10 years, Iraq's urban and rural society has been expanding and undergoing rapid social change. The growth of the Baghdad and Basra urban centers, for example, has been astounding. The accelerated urbanization process throughout the country has resulted in a dramatic decrease of the population in the rural areas. The growth of the cities reflects the concentration of trade, construction, and real estate business activities fed by oil revenues and agricultural surpluses.

(2) Most rural inhabitants live in villages where houses and buildings are of primitive construction and are similar in size and shape. In the south the majority of the houses are made of mud and reeds, and in the north they are made of stone. The villages are generally located along rivers or canals and dwellings are built in irregularly patterned clusters connected by narrow, winding roads. The larger villages have a central area where the mosque and one or more coffee houses are located. Within these rural areas,

state funds are being used to update or introduce electricity, potable water, and health services.

c. Coasts and beaches. Iraq has 58 km of coastline along the Persian Gulf and claims 12 nm as its territorial waters. Coast and beach access to Iraq is discussed in [Table 19](#).

Table 19. Coast and beach access.

AREAS	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
A11	The short coastline is made up of mud flats and salt marshes which are poorly suited to amphibious operations.	Movement of an amphibious force up the Shatt al Arab to Basra, approximately 100km inland from the Persian Gulf and the major strategic locations in this part of Iraq, would be extremely hazardous. The river does not provide sufficient room to maneuver for landing craft and supporting ships.

Table 20. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Desert	Movement limited by the wadis which cut through the area. Steep banks will hinder crossing. Movement from the mountains to the river valley is channelized by these wadis.	Air to good conditions; most wheeled traffic will be restricted to roads and trails. Local conditions will vary.	See FM 90-3 Desert Operations
Mountains	Movement severely restricted by the rugged mountains which border steppe area. The steppes themselves provide excellent ground	Good on existing roads; poor in other areas. Steppe areas will allow fair cross-country movement for most wheeled tactical vehicles.	See FM 90-6 , Mountain Operations

	for maneuver.		
Tigris-Euphrates Plain	Poor cross-country mobility due to numerous streams and canals which will affect large scale operations. Marshy areas will be inaccessible to most tracked vehicles. Existing road system offers mobility on an axis parallelling the rivers, but area for maneuver is limited.	Good on existing roads; poor otherwise.	Area suitable for riverline operations.
Upland Plain	Excellent movement and maneuver potential.	Good cross-country movement for tactical wheeled vehicles.	Some aspects of desert operations will apply.
Tigris-Euphrates-Shatt al Arab System	Crossing these rivers will require bridging and ferry support for large scale operations.	Same as tracked vehicles.	

6. LOCs. LOCs in Iraq had improved considerably during the 1980s, but Operation Desert Storm reversed this trend. The most important transportation axis lies roughly north and south between Mosul, Kiruk, Basra, and the Persian Gulf via Baghdad. It parallels the Tigris and Euphrates river systems. Iraq had ambitious plans for the expansion of its transportation and communications network. The Iran-Iraq War created a shortage of funds for some of these projects and Desert Storm destroyed or severely damaged most of the bridges on the main Baghdad to Basra LOCs. Key rail lines and roads were also severely damaged and it will probably be a long time before normal LOCs will be reestablished, let alone be expanded.

- a. Roads. Although many bridges were seriously damaged by allied bombing during the Gulf war, the damage caused then has been substantially repaired. Nearly all of the major cities are

linked by paved roads. These paved roads are heavily used and require considerable maintenance. The secondary and feeder roads are primarily unpaved. Driving is affected by summer heat and limited by obstructions and rough surfaces off the main roads. A 1,200 km six-lane expressway was being constructed to link Iraq, Kuwait, Jordan, and Syria and will pass through Baghdad, Diwaniya, and Basra. A similar expressway was being planned to link Baghdad with the Turkish border via Kirkuk, Irbil, and Mosul. The road network is described in [Tables 21](#) and [22](#). [Figure 2-4](#) locates the main roadways.

Table 21. Road network.

<u>TYPE</u>	<u>LENGTH</u>
Paved	39,990 km
Unpaved	6,510 km

Table 22. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>CAPABILITY/ REMARKS</u>
Baghdad-Kirkuk-Mosul	433 km	None
Baghdad-Mosul-Al Qamishli (Syria)	625 km	None
Baghdad-Al Hadithah-Qusaybah- Dayr az Zawr (Syria)	489 km	None
Baghdad-Hilla-Najaf-Samawati-Basra	802 km	None
Baghdad-Al Kut-Amara-Basra Basra	570 km	Transit time about 7 hours
Basra-Abadan (Iran)	560 km	None
Basra-Safwan	50 km	7% road grade between Mosul and Zakho
Kirkuk-Sulaymaniyah	109 km	None

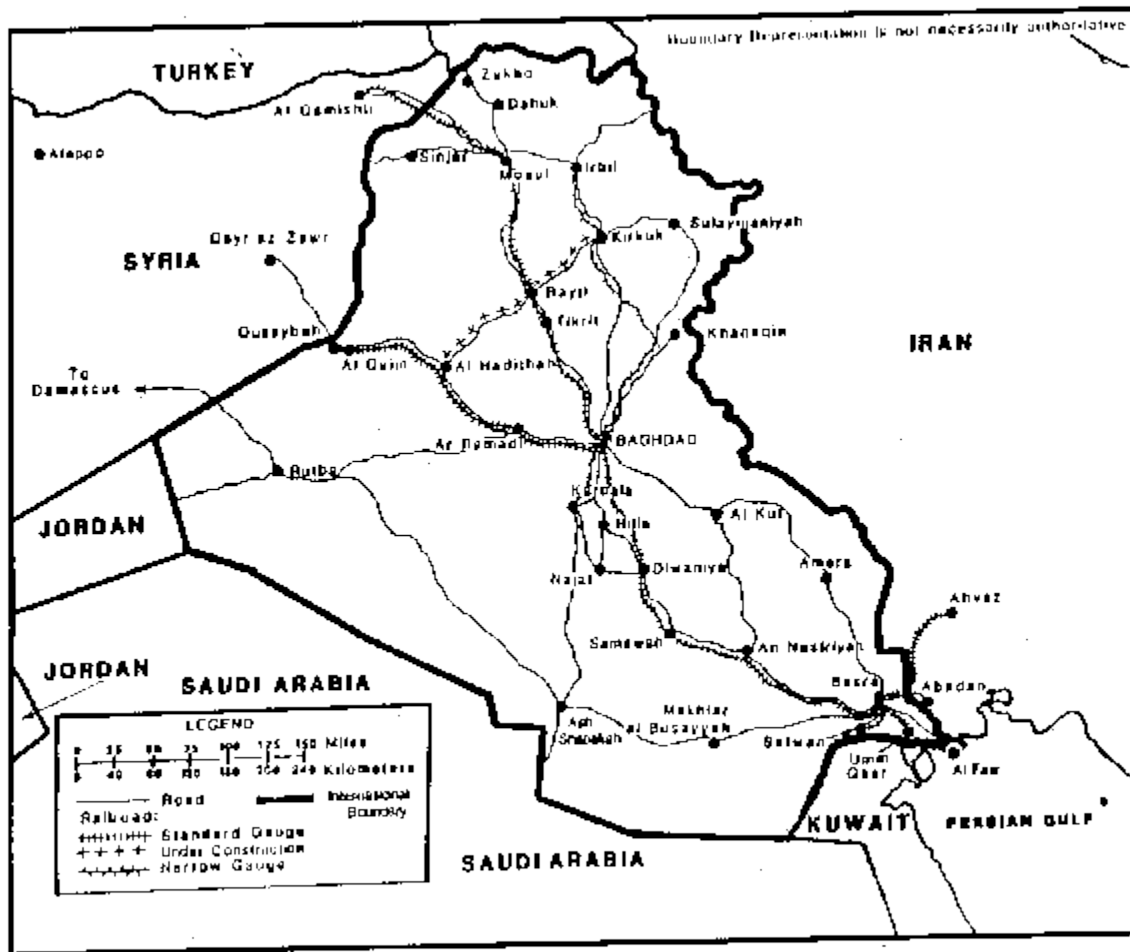


Figure 2-4. Roads and railroads of Iraq.

b. Railroads.

- (1) The Iraqi Republic Railway system consists of two separate railroads. One is the standard 4.71 feet (ft) (1,435 m) gauge; the other is the 1-meter gauge. Total track of both gauges is 2,032 km. [Table 23](#) identifies the Iraqi rail network. [Table 24](#) and [Figure 2-4](#) identify and locate the main routes.
- (2) In the 1980s Iraq started to increase its rail network substantially with the addition of more standard gauge, high-speed tracks. A new line from Baghdad to Umm Qasr, via Basra, was under construction. A 273 m line was also under construction between Al Hadithad and Kirkuk, via Bayji. All lines entering Baghdad were scheduled to be connected to a new 112 km Baghdad loop line. Furthermore, Iraq planned to provide links with Kuwait and Saudi Arabia.
- (3) The Iraqi railway network has suffered serious disruption as a result of both the Gulf War and the subsequent sanctions imposed. In 1992, freight loads had been cut in half from the previous year's total. However, passenger traffic has actually increased. Railway construction is attempting to reverse this downward trend. The main priority

has been the development of lengthy branch lines serving industrial plants. Baghdad remains, however, the focus for the majority of railway lines, and a key component of the new main line plans is a Baghdad Belt Line of 112 km, from which the new trunk routes will extend in flying or burrowing junctions. This scheme, involving three major river bridges and a 7.5 km tunnel, is also motivated by anxiety to separate Baghdad area passenger and freight traffic to the maximum extent.

Table 23. Railroad network.

<u>TYPE</u>	<u>REMARKS</u>
Rail headquarters	Baghdad Central Station Building Damascus Square, Baghdad
Total track	2,962 km
Standard gauge track	1,435 m 2,457 km
Narrow gauge track	1 m 505 m
Motive power	408 locomotives 4 electric railcars
Rolling stock	484 passenger coaches 11,650 freight car

Table 24. Main railway routes.

<u>MAIN ROUTES</u>	<u>GAUGE</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Baghdad-Mosul-Al Qamishli (Syria)	Standard	640 km	83 km of track inside Syria
Baghdad-Kirkuk-Irbil	Narrow	408 km	Spur line to Karbaia 93 km; being replaced with standard gauge line and extending to the Turkish border
Baghdad-An Nasiriyah-Basra	Standard	569 km	Spur line to An Nasiriyah 12 km
Basra-Umm Qasr	Standard	95 km	Spur line to Safwan 24 km
Basra-Ahvaz (Iran)	Standard	130 km	Status of this rail line is unknown; 100 km of track inside Iran
Baghdad-Qusaybah	Standard	550 km	Spur line from al Qaim to Akashat

c. Iraqi port facilities are located on the Persian Gulf. Due to the conflict between Iran and Iraq, operations at these ports have been stopped or been limited for some time. Before utilizing some of the port facilities again, the Shatt al Arab was cleared of bombs and wreckage and then dredged. [Table 25](#) provides a listing of Iraqi ports and their capabilities: [Figure 2-5](#) identifies their locations. Basrah and Umm Qasr are the primary commercial ports of Iraq, although a port was opened at AzZubayr (Khoral-Zubair) in 1979, only to be closed again in 1980, because of the Iran-Iraq war. Az Zubayr and Umm Qasr are operational again, with 25 berths claimed to be working by the Iraqi authorities. Az Zubayr, southwest of Basra is an industrial port complex for fertilizer exports, and imports of iron ore for the development of an iron and steel complex. The naval port of Umm Qasr has been handed over to Iraq by the UN border delimitation and there are problems over access to the channel leading to the port itself, which is also under Kuwaiti control. The oil port of Faw was destroyed during the Iran-Iraq war. Iraqi shipping lines provide cargo and tanker service between the Persian Gulf and European ports.

Table 25. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Basra	Main port; wharves can accommodate 2 vessels; repair facilities; full provisioning;* access to railway lines
Umm Qasr	Major port; wharves with eight cargo-ship capacity; road and rail connections; fresh water available; approach controlled by Kuwait
Khor al Amaya	Offshore, deep sea crude oil terminal; three loading jetties; fresh water available
*Includes fuel, fresh water, and food.	

d. Air transportation. The government-owned Iraqi Airways, headquartered in Baghdad, flew domestically and internationally but Desert Storm destruction and the flight of Iraqi aircraft to Iran will preclude near term resumption of these services. Airfield types are depicted in [Table 26](#) and airfield locations are identified in [Table 27](#). There are two major international airports in Iraq, at Baghdad and Basrah: in addition, there are over 100 other airports of varying sizes scattered around the country. Major airfields are shown in [Figure 2-5](#).

Table 26. Airfield types.

<u>AIRFIELDS</u>	<u>111 (102 USABLE)</u>
Runway type	
Permanent surface	73
Unpaved fields and	39

usable airstrips

Unusable airstrips

9

Runway length*

Over 3,600 m

9

2,400-3,659 m

52

1,220-2,439 m

15

Under 1,220 m

26

*Runway lengths are for paved and unpaved usable airfields only.

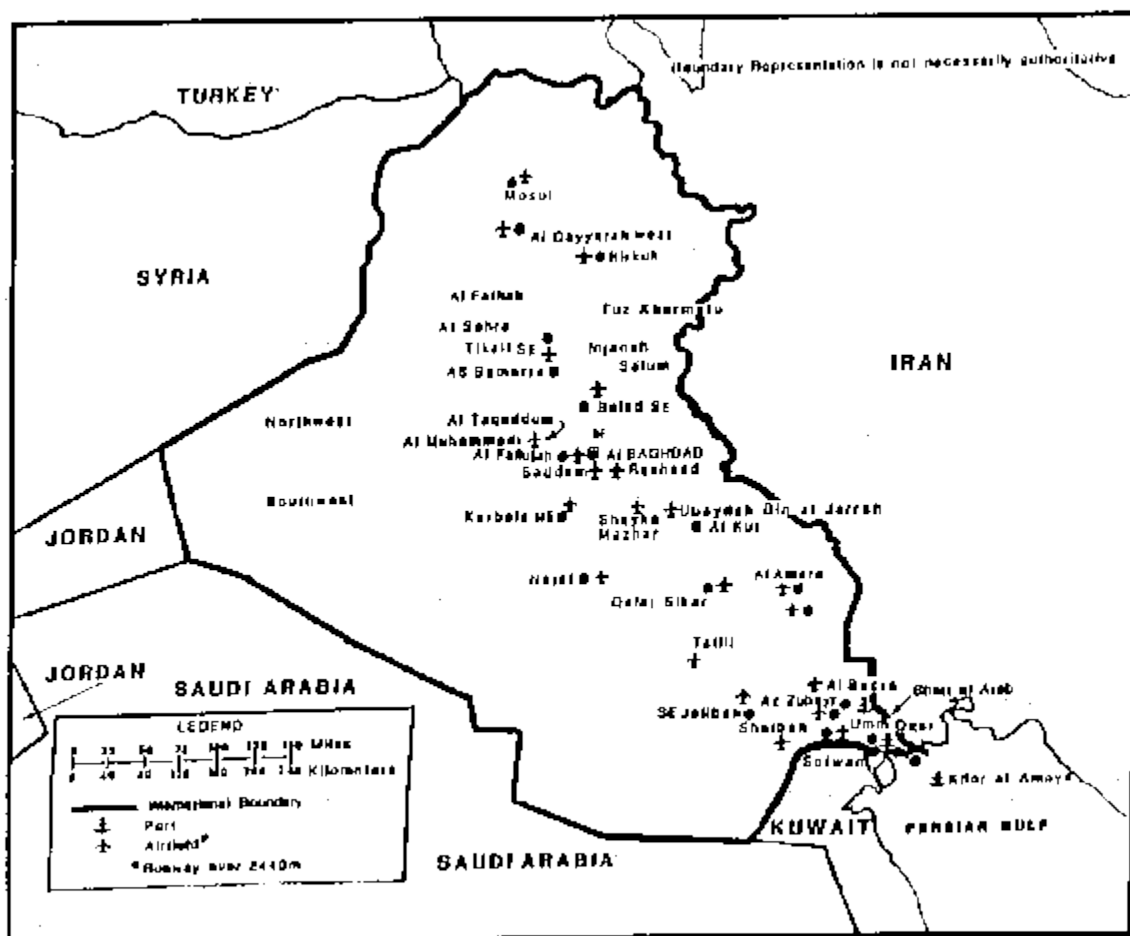


Figure 2-5. Ports and airfields of Iraq.

Table 27. Airfields

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Baghdad/ Muthenna	Iraqi military facility W of center of Baghdad; one 3,000 m asphalt/concrete runway; sited in a developed industrial/residential area; home base for Iraqi Air Force transport squadrons and the navigation school.
Balad Southeast	Iraqi military facility; 19 km ESE of Balad, 66 km N of Baghdad; two 3,550 m concrete runways, one of which is still under construction; installation to be a major Iraqi Air Force base when completed.
Al Basra West	Probable civil aviation facility under construction; 12.6 km NNW of Basra; 3,200 m of runway in low-lying area.
Jalibah	Iraqi military facility; 115 km W of Basra; unoccupied emergency dispersal/recovery strip.
Karbala Northeast	Iraqi military facility; 18 km NNE of Karbala; unoccupied dispersal/recovery strip; one 2,950 m graded earth runway; sited on an alluvial plain; no facilities.
Kirkuk	Iraqi military facility; 1.6 km W of Kirkuk; one 2,800 m asphalt and one 2,325 m graded earth runway; one 2,900 m runway under construction; major Iraqi Air Force base with support facilities for at least two fighter squadrons; strategically located near the Kirkuk oil fields and the Kirkuk refinery and petrochemical plant.
Mosul	Iraqi military facility; 3 km SE of Mosul; no further unclassified information.
Najaf	Iraqi military facility; 7 km E of Najaf; one 3,000 m asphalt and one 2,450 m sand runway; sited on a level area just west of the Euphrates River; unoccupied emergency dispersal/recovery strip.
Safwan	Iraqi military facility; 46 km S of Basra; unoccupied emergency dispersal/recovery strip.
Shaibah	Iraqi military facility; 19.5 km SW of Basra; one 2,975 m and one 520 m asphalt runway; sited on open desert; no further unclassified information.
Shayka Mazhar	Iraqi military facility; 51 km SSE of Baghdad; unoccupied airfield with one 3,650 m runway under construction.
Tallil	Iraqi military facility; 171 km WNW of Basra; two 3,050 m of concrete runways; sited on sandy desert

	capable supporting at least two fighter squadrons and support units.
Tikrit Southeast	One 2,975 m asphalt runway; sited 149 km NNE of Baghdad; no further information available.
Ubaydah Bin al Jarrah	Iraqi military facility; 156 km SE of Baghdad; one 3,200 m concrete and one 3,600 m asphalt runway; sited on alluvian plain; major Iraqi Air Force fighter base with facilities for at least three fighter squadrons or two medium squadrons.
*Runway length 2,400 m or longer.	

e. Water transportation. There are 1,015 km of waterway in Iraq. The Shatt al Arab is navigable by maritime traffic for approximately 100 km, and the Tigris and Euphrates are navigable by shallow-draft vessels. Barge traffic can navigate the lower portion of the Tigris to Baghdad, but the middle and upper portions of the Tigris River are not navigable. The usable waterways of the Tigris and Euphrates are essential to the life of the country ([Figure 2-6](#)). These waterways are under control of the State Organization of Iraqi Ports and have 1,036 registered river craft and 153 motor vessels at their disposal. In December 1992, Iraq opened a Third River, a man-made drainage canal midway between the Tigris and the Euphrates. The Third River is 565 km long and is wide enough to take 5,000-ton barges with cargo traveling from southern Iraq to Baghdad. The waterway is officially described as a replacement for the blocked Shatt al-Arab. But it is alleged that there are other reasons for its construction, such as draining the marsh lands between the rivers in the south to displace the Shia Muslims who have taken refuge there, and to enable Iraq to exploit the oilfields of the southern region.

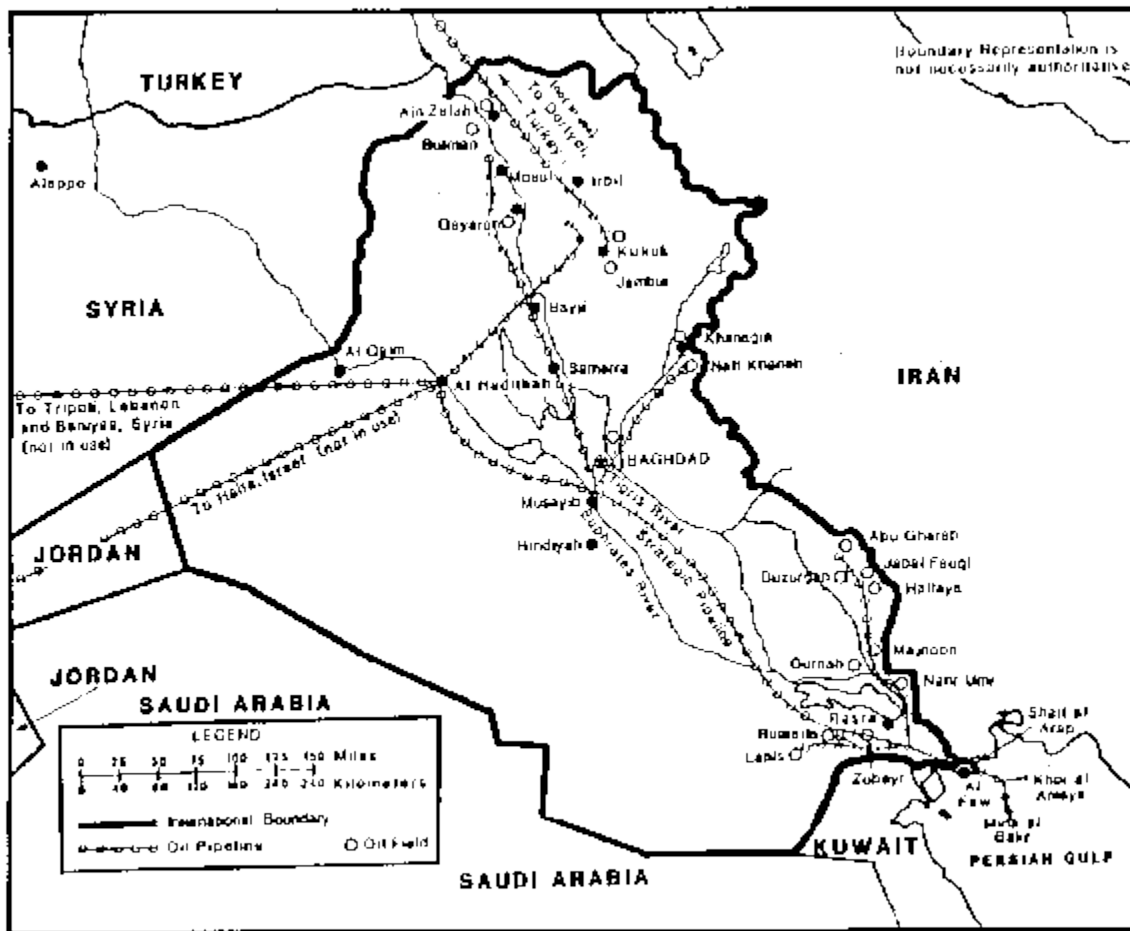


Figure 2-6. Water transportation and Pipelines of Iraq.

f. Pipelines. Iraq has a pipeline system consisting of in-country lines to the Persian Gulf and two international lines that pass through Turkey and Syria to Mediterranean terminals. The trans-Syrian pipeline was shut down by Syria during the Iran-Iraq war and the other pipelines were shut down at the beginning of the Gulf War in August 1990. [Figure 2-6](#) and [Table 28](#) locate and identify the pipelines. During the Iran-Iraq War, Iraq constructed a trans-Saudi pipeline, but that too was shut down in August 1990. Iraq's oil industry is very vulnerable to external forces, as shown by these past events.

Table 28. Pipeline network.

<u>TYPE</u>	<u>LENGTH</u>
Crude oil	4,350 km
Natural gas	1,360 km
Refined products	725 km

<u>MAJOR PIPELINES</u>	<u>DESCRIPTION</u>
Iraq-Turkey Pipeline	Crude oil; 1.2 m pipe diameter; capacity of 5 million tons a year; from Kirkuk through Turkey to Doryol on the Mediterranean coast; 980km long.
"Strategic" Pipeline	Crude oil; capacity 50 million tons a year; pump in either direction; from Kirkuk-Al Hadithah to Basra oil fields in Gulf; the pipeline from Al Hadithah through Syria has been shut down.
NOTE: A pipeline from Al Hadithah to Haifa, through Jordan, has been shut down since 1948 and is unusable.	

PART B: MILITARY CAPABILITIES OF IRAQ

1. Background.

- a. The Iraqi Armed Forces were formed by the British after World War I. In 1934 conscription was introduced and by 1941 the armed forces totaled well over 41,000 personnel. A reduction occurred after World War II, and by 1948 the military was further reduced to about 20,000, including an armed gendarmerie.
- b. A series of attempted and successful coups d'etat from 1939 to 1968 resulted in a number of armed forces reorganizations and the transfer of control of the armed forces to various factions of government. Control of the armed forces was solidified under the President of Iraq after the Ba'ath party takeover in 1968.
- c. The Iraqi armed forces were originally organized along the lines of the British general staff model. This organization governs land operations ranging from the lowest unit, the squad, up to the largest standing unit, the corps.
- d. Soviet influence, combined with experience derived from the 1980-1988 Iran-Iraq war, have caused modification of the original British model in both organization and doctrine. Expediency and the wide range of equipment, organization, and training levels among units necessitate variations among units.
- e. After the conclusion of Operation Desert Storm, the number of Iraqi tanks appears to have been cut in half. This is a result of both the decisive air war and the mass destruction in the less than two weeks of ground warfare. It appears that the Soviet technique used by the Iraqis of digging their tanks in only leaving the turret exposed, was a primary cause of the loss of so many tanks. U.S. volatile fuel-air weapons tended to work quite well at blowing the tops off the tanks. And when the U.S. tanks streamed around the front lines from the West, the buried tanks were unable to dig out and move quickly, thus defeating their purpose as a highly mobile high caliber gun.

f. With all the Iraqi chemical and biological facilities in ruin, Iraq's weapons of mass destruction were limited to those on hand in protected regions of Iraq, and any remaining SCUD missiles in the Iraqi inventory.

g. Also, during the war, to avoid the risk of being destroyed on the ground, many Iraqi aircraft were flown out of the country to Iran. After the war, the U.S. would not allow the return of these aircraft.

h. In October 1994, Iraq began moving forces toward Kuwait again, just as the U.S. began a gradual drawdown of forces in the region. By November 1994, the U.S. had redeployed a substantial number of troops in theater, and Iraq backed down.

i. All during the period following the Gulf War, the U.S. and coalition allies ran (and are still running) Operation Southern Watch enforcing a no fly zone in both Northern and Southern Iraq.

j. The U.S. Navy and coalition naval forces have also been conducting Maritime Intercept Operations in order to enforce the U.N. embargo on trade with Iraq until such time as they comply completely with U.N. Security council resolutions addressing weapons of mass destruction and other issues stemming from the Gulf War.

2. Command structure. The defense structure is headed by the President (Saddam Hussein), who is also the Minister of Defense and the Commander in Chief. Each of the three services is represented on the Revolutionary Command Council. The National Defense Council advises the President on military policy issues ([Figure 2-7](#)).

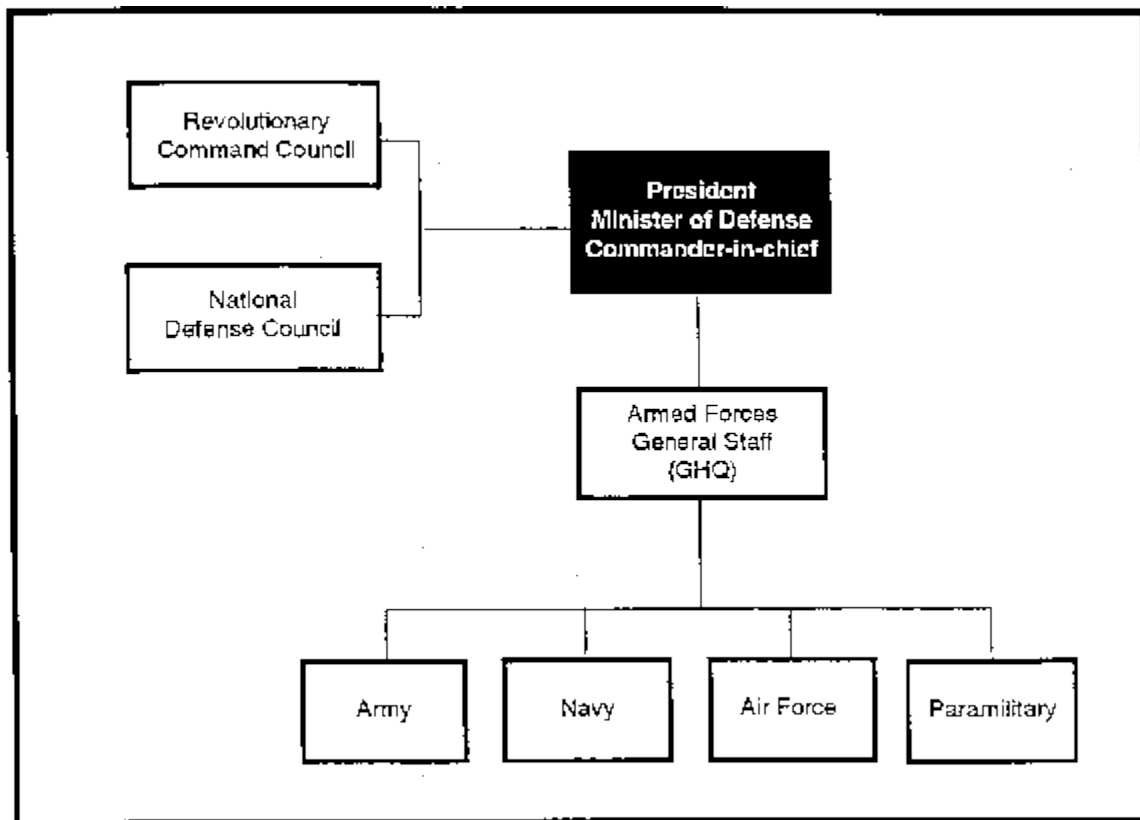


Figure 2-7. Iraqi Armed Forces command structure.

3. Iraqi Armed Forces. The branches of the armed forces include the Army, Air Force, Navy, and paramilitary forces. The President is Commander in Chief of the Armed Forces and exercises direct control in the defense of Iraq. The Armed Forces have two roles: to defend the regime and the country. The first goal is achieved through the Baghdad garrison and the general reserve. The second is achieved through the effective deployment of troops along hostile borders.

4. The Iraqi Army, formerly the world's third largest, had a troop strength of approximately 1,100,000 at the start of Operation Desert Shield. Prior to Operation Desert Storm it was considered one of the best equipped and most combat-experienced in the world. It could conduct multi-corps operations spread over 100 km or more and was capable of coordinating air and artillery, timing of movements and operations, coordinating complicated logistics requirements, and getting supplies, equipment, and troops to the right place at the designated time. Furthermore, the Iraqi Army was known by its flexibility, unity of command, and high level of mobility. The Army was highly qualified in planning, command and control (C²), logistics and maintenance, but limitations placed upon the commanders' initiative, especially in exploiting success, reduced these advantages. However, the Iraqi Army did not live up to these standards during the recent Gulf War. US and multi-national forces at first destroyed the Iraqi C2 centers, lines of communication (LOCs), and effectively bombed troop units and equipment in Iraq and Kuwait. Thereafter, it took US and multi-national forces only 100 hours of ground war before the Iraqis surrendered. Because of the massive destruction following the Gulf War, the amount of reliable information about the Iraqi military structure/organization and equipment is limited. Tactical doctrine and operational art have been refined and amended as a result of the defeat by coalition forces during the Gulf War. The following information is what is known. The estimated strength of the Iraqi Army is 350,000 active service soldiers, with the lower ranks undertaking compulsory military service. Conscripts serve for a period of between 18 and 24 months. Between 1990 and 1993, at least 100,000 reservists were called up for the invasion of Kuwait and for the operations against the Marsh Arabs. Since the Gulf War there has been a major re-structuring of the Iraqi armed forces. There has been a considerable downsizing in strength and in the numbers of divisions. As of early 1998, information for defectors and opposition sources indicated that the army now consists of five corps and 17 divisions, while the elite Republican Guard consisted of two corps and six divisions, the latter being composed of two mechanized divisions, two armored divisions and two infantry divisions. Iraq has three special forces brigades and one marine brigade. In addition to the Republican Guard, there is a super-elite formation, the Special Republican Guard (SRG) which takes a prominent role in the defense of the Baghdad area. The SRG has 13 battalions organized into a number of brigades and is about 26,000 strong. It is charged with defending the life of the president and preserving the Baath Party. Saddam's son Qusay is the supervisor of the SRG; the commander is General Kamal Mustafa al Tikriti, whose sister-in-law is Saddam's youngest daughter, Hala. SRG personnel are recruited mainly from Saddam's home area of Tikrit. There are units within the SRG dedicated to special operations and commando-style raids. The SRG has been active against the Marsh Arabs and the Kurds. A major reorganization of the armed forces was undertaken in December 1993. Saddam, as supreme commander-in-chief, reinstated the Popular Army concept, abolished after the Gulf War. During the crisis of early 1998, as Western forces gathered for a confrontation with Saddam

over the UNSCOM weapons inspection issue, the regime embarked on a campaign to recruit a million Iraqis for the Popular Army. However, observers saw this more as a morale boosting exercise, rather than an effective military measure. There were reports in 1997 that Saddam's son Qusay was considering a new structure for the Iraqi armed forces, that would bring the army, the Republican Guard, the Special Republican Guard and other units under a unified command structure, with the collective title of the Iraqi Army. This prospective plan was seen as yet another move the regime to tighten control over the armed forces. Precise details are unavailable, but it is believed that units in the armed forces, especially the regular army, are well below full strength. The Republican Guard is also thought to be under-manned, but to a lesser extent than the regular army. In the Republican Guard, when numbers are up to full strength, a mechanized division consists of two mechanized brigades and an armored brigade, while an armored division consists of two armored brigades and a mechanized brigade. The Iraqi Army chain of command is shown in [Figure 2-8](#).

NOTE: 2 x surface-to-surface (SSM) brigades with at least 50 x free rocket over ground (FROG) and 36 x Scud B/Abbas/Husayn launchers were used by the Iraqis during Operation Desert Storm. These brigades most likely operated independently and were under operational control of GHQ or the President.

- a. Iraqi General Headquarters. The General Headquarters (GHQ) is the highest military echelon. Controlled by the Army, it integrates army, air force, navy, and popular army operations. While the GHQ is primarily a staff element, it can deploy a forward command post to the front. GHQ controls both regular army corps and a corps-level strategic reserve designated the Republican Guard Forces Command (RGFC) ([Figure 2-9](#)).
- b. Iraqi regular army corps. The corps is the operational headquarters for the Iraqi Army. There is no intermediate headquarters between corps and GHQ. Regular army corps have territorial areas of operation. The RGFC, a mobile command conducting operations wherever directed, will be dealt with separately below. Iraqi corps bear the responsibility for administration and logistics as well as combat operations. The corps normally controls 3 to 4 x divisions. The burden of support operations and the command and control of additional elements often force corps to send out a forward command post.
- c. Iraqi regular army corps organization. A regular army corps may control, at one time, from 3 to 4 x divisions with a mix of types of divisions. For example, 2 x infantry divisions (IDs) and 1 x armored divisions (AD) or 1 x ID, 1 x mechanized division (MD), and 1 x AD, etc. Other units organic to the corps can vary in number as shown in [Figure 2-11](#).

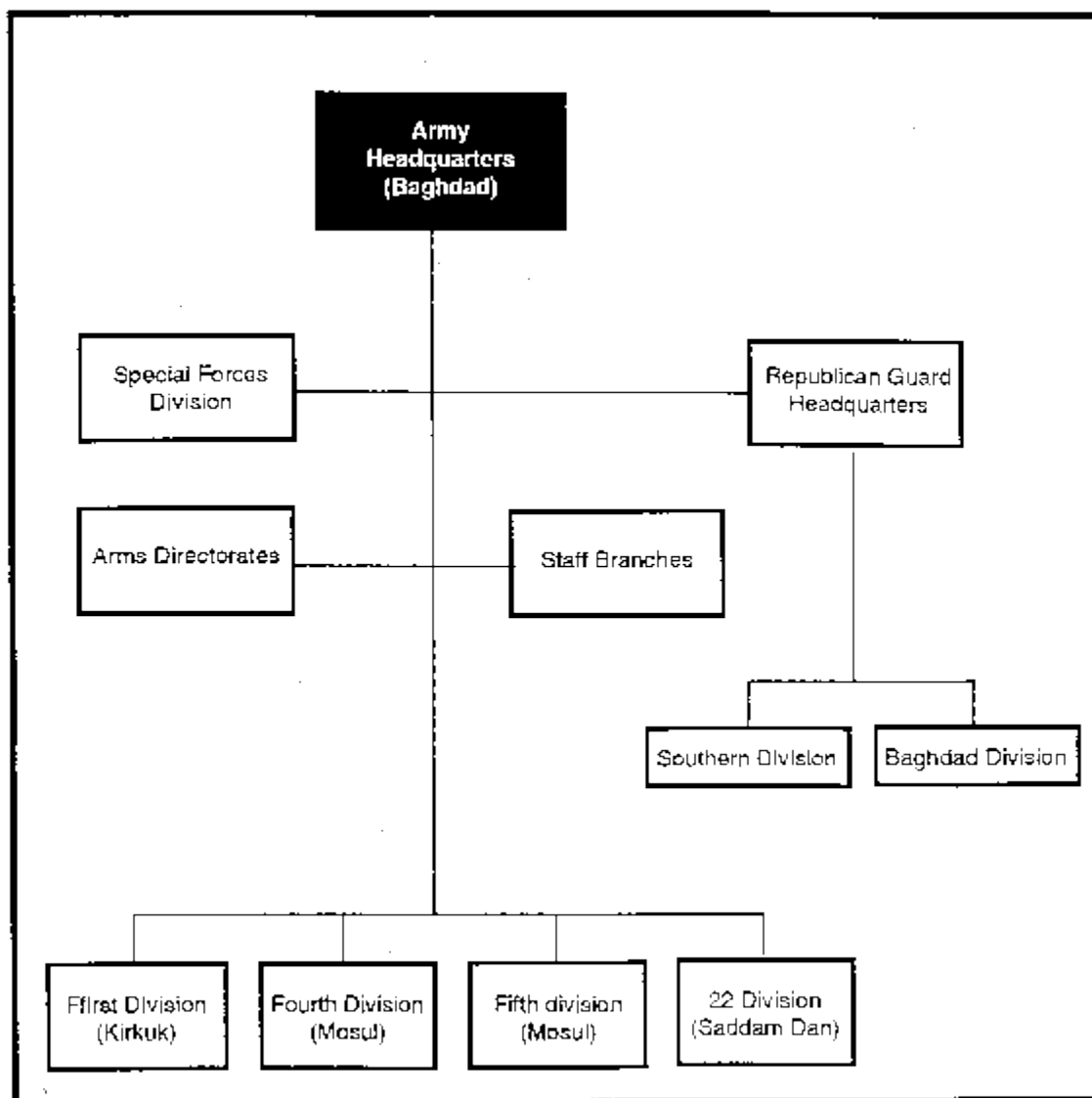


Figure 2-8. Army chain of command.

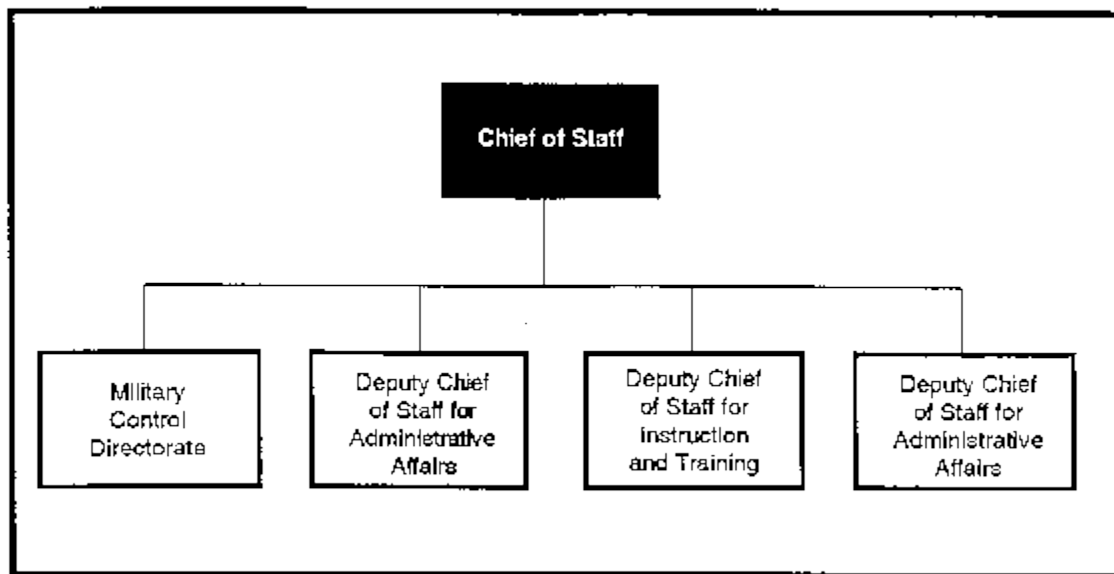


Figure 2-9. Iraqi GHQ organization.

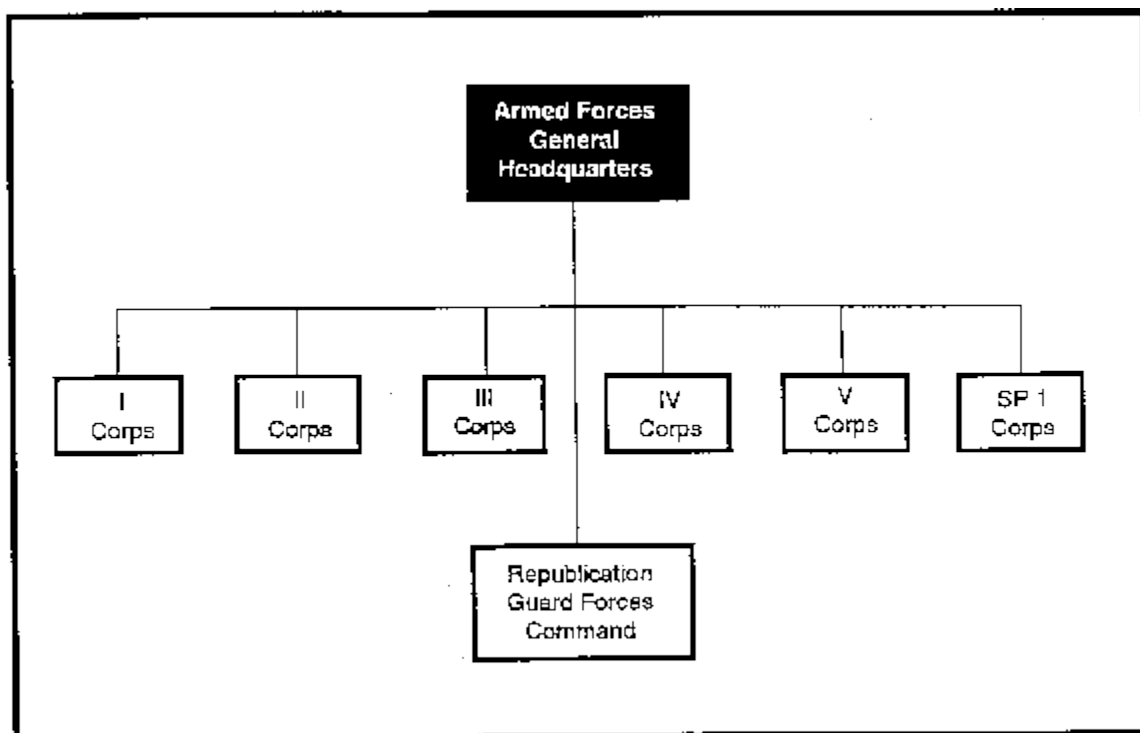


Figure 2-10. Iraqi GHQ and corps command relationships.

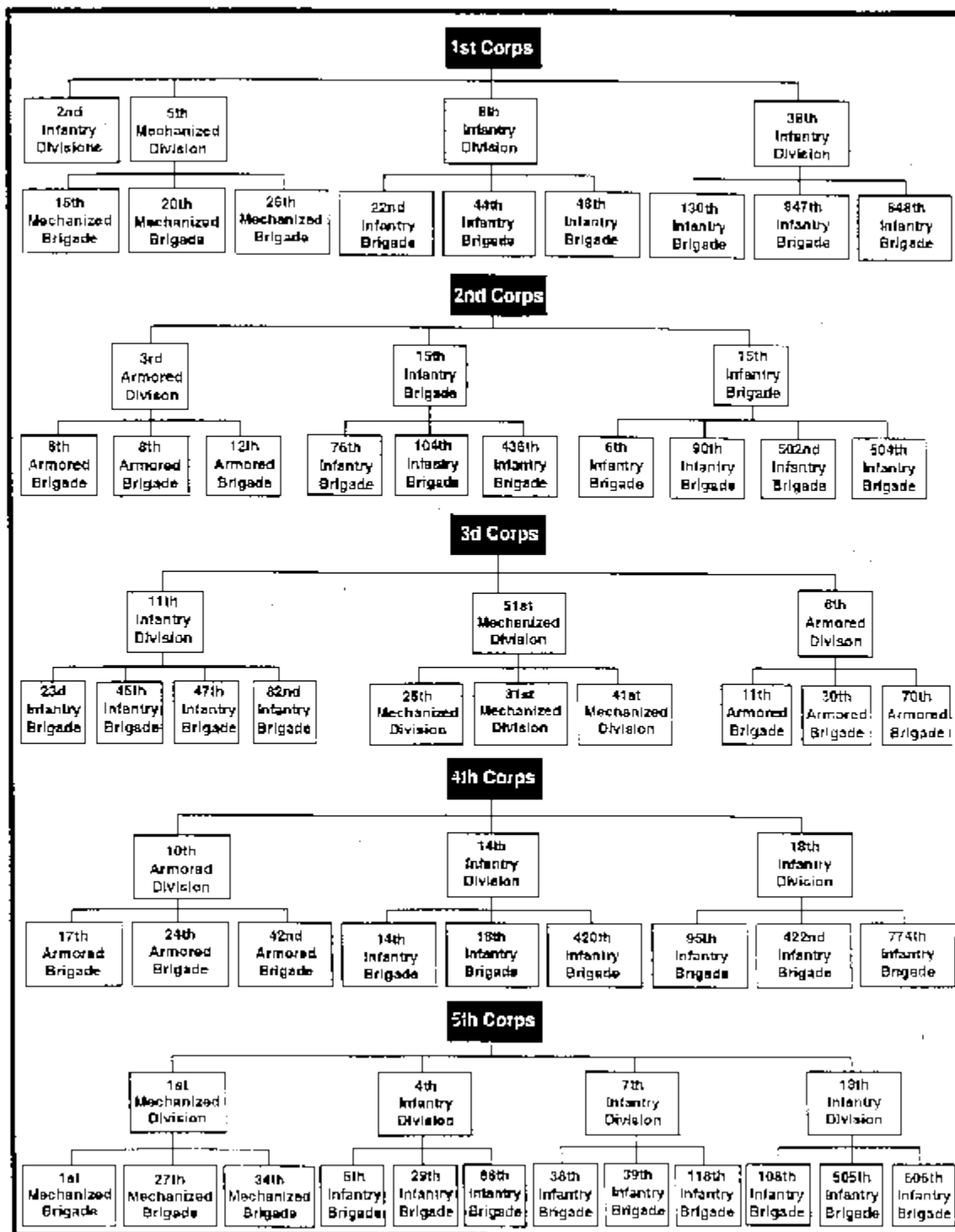


Figure 2-11. Iraqi army corps organization.

d. Iraqi regular army division.

(1) The Iraqi regular army has three basic types of divisions: armored, mechanized (mech) infantry, and infantry. The basic organizational structure of each type of division is similar. They consist of 3 x maneuver brigades, divisional artillery, and various

combat support and service support units ([Figure 2-12](#)). Typically a mechanized infantry division has 3 x mechanized infantry brigades and an armored division has 3 armored brigades. The infantry division has 3 x infantry brigades.

e. Iraqi Republican Guard Forces Command (RGFC).

(1) Historical evolution.

(a) Prior to the Iran-Iraq War, the Republican Guard was a 2 x brigade presidential guard force, whose mission was to secure the regime. Between 1982 and 1986, the Republican Guard was expanded to 6 x brigades and was given the additional mission of providing a small strategic reserve for counterattacks against Iranian penetrations of Iraqi defensive positions. They suffered heavy casualties in unsuccessful counterattacks following the February 1986 Iranian capture of Al Faw peninsula.

(b) That defeat and the lack of additional counterattacking forces convinced the Iraqi leadership that a large strategic reserve was needed. To create that reserve a major expansion of the Republican Guard was undertaken. The new Republican Guard Forces Command (RGFC) became a corps level organization with 2 corps and several division headquarters subordinate to it. By April 1998, the RGFC had grown to 7 x divisions of 22 brigades ([Figures 2-12](#)) and can be identified by a red triangle patch worn on the shoulder.

(2) Operational experience. The final two years of the Iran-Iraq war saw the development of a mature, experienced RGFC organization. The RGFC was employed skillfully as a strategic reserve in a series of two-corps defensive and offensive operations. The RGFC assumed a tactically offensive role: the counterattack.

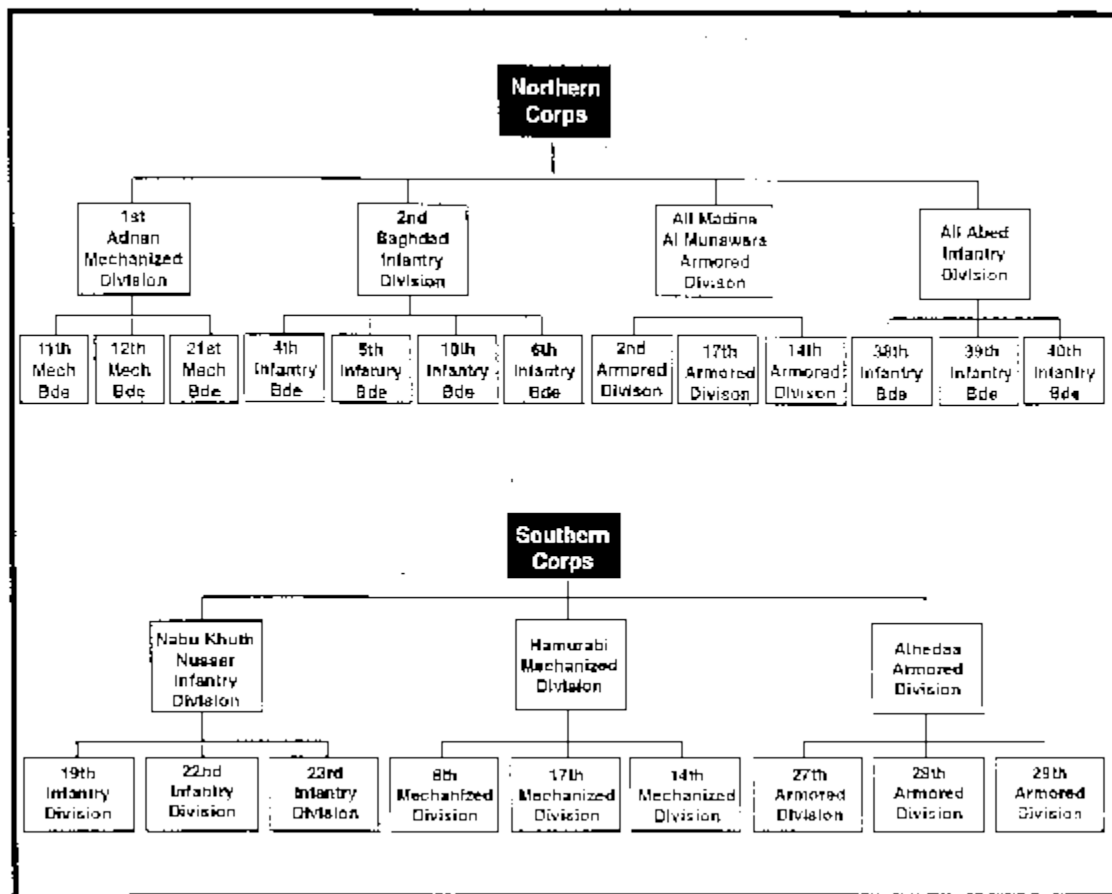


Figure 2-12. Republican Guard.

(3) Personnel.

(a) Unlike the conscript regular army, the Republican Guard is all volunteer and displays a motivation and initiative not found in conscripts. At its inception, only men from Saddam Hussein's home town were eligible for the Republican Guard. This limited the size of the Republican Guard to 3 x brigades.

(b) To expand the Republican Guard into a decisive force on the battlefield, eligibility was opened to volunteer college students from all parts of the country. With college deferments removed, large numbers of relatively well educated and motivated volunteers poured in to gain the prestige and benefits of being in the Republican Guard. This influx of fresh manpower, undaunted by the years of defensive warfare, enabled the Republican Guard to become the highly motivated and trained offensive force that it is today.

(4) Strengths. The RFGC is the best equipped and best trained force in the Iraqi ground forces. It is a self sufficient and self contained force with organic combat, combat support, and combat service support elements. It maintains its own supply system and has priority for all supplies. This results in "pampered" forces that are relatively well paid and receive the best food, uniforms, equipment, etc.

f. Iraqi Popular Army.

(1) The Iraqi Popular Army consists of a popular militia composed of civilian volunteers, members of the Ba'ath regime against internal opposition and to serve as a power base (and counter-balance) to the regular army.

(2) The Popular Army is organized on an area basis with a total of 19 divisions.

(a) Popular Army GHQ in Baghdad controls area HQs located in Baghdad and each of Iraq's 18 x administration districts. Each area HQ is commanded by a district commander.

(b) Each district controls a number of "sectors" headed by sector commanders.

(c) Each sector controls up to 10 "bases," led by platoon commanders. There are four types of bases:

1 Infantry or combat bases with infantrymen.

2 Command bases with commanders.

3 Close support bases with light mortars and MGs.

4 Antiaircraft bases, with antiaircraft (AA) guns and MGs.

(3) Each base contains up to 10 x squads of from 10 to 15 men. Personnel are assigned to squads based on their residences, to ensure swift mobilization.

(4) Training in the Popular Army is limited to several weeks prior to mobilization, although some instructors come from the regular army to help improve the quality of training. Training is conducted in:

(a) Physical training.

(b) Use of arms (mainly small arms).

(c) Obstacle crossing (including wire and mine obstacles).

(d) Assaults on enemy positions.

(e) Searches in mountainous terrain.

(f) Possible air assault training for Popular Army commandos.

5. Iraqi Air Force. The mission of the Air Force is to conduct independent air attacks against enemy targets, to participate in the defense of the country against hostile air action, and to support the Army and Navy by air strikes, reconnaissance, and air supply and transport. Air bases are located at Al Sahra, Al Taqaddum, Amara New, Baghdad/Muthenna, Balad Southeast, Irbil, Injanah, Jalibah, Karbale Northeast, Kirkuk, Mosul, Najaf, Qayyarah, Rasheed, Safwan, Salman Pak, Salum, Samarra East, Shaibah, Shayka Mazhar, Sabakhu, Tallil, and Ubaydah Bin al Jarrah. [Figures 2-13](#) and [2-14](#) show the force trends from 1975-1998 broken down by manpower and weapon type.

Category/Weapon	1975	1980	1985	1990	1995	1998
Manpower						
Total Active	135,000	242,250	520,000	1,000,000	382,500	387,500
Regular	135,000	242,250	520,000	1,000,000	382,500	387,500
Reserve	250,000	250,000	75,000	850,000	650,000	650,000
Paramilitary	19,800	79,800	4,800	4,800	24,800	55,400
Army and Republican Guards						
Manpower	120,000	200,000	475,000	955,000	350,000	350,000
Reserve	250,000	250,000	75,000	-	350,000	450,000
Active Main Battle Tanks	1,290	2,750	2,900	5,500	2,700	2,700
Total Main Battle Tanks	1,290	2,750	2,900	5,500	2,700	2,700
AIHV/Recon, Lt. Tanks	-	300	1,050	4,434	2,400?	1,600
APCs	1,300*	2,200	2,500	6,000	2,000	2,200
Self Propelled Artillery	90	240	440	500+	230	150
Towed Artillery	700	800	3,000	3,000	1,500	1,800
MRLs	-	-	350	200+	250	150
Mortars	-	-	-	-	2,700	2,000+
SSM Launchers	-	-	43	86	12	36?
Light SAM Launchers	-	-	-	400+	800	800
AA Guns	800	1,200	4,000	4,000	5,500	5,500
Air Force Manpower	12,000	28,000	30,000	30,000	15,000	18,000
Air Defense Manpower	-	10,000	10,000	10,000	15,000	17,000
Total Combat Aircraft	247	332	500	689	353	353
Bombers	7	12	15	16	67	67
Fighters/Attack	110	195	181	360	130	130
Fighters/Interceptor	130	115	275	275	180	180
Recon/FGA Recon	0	0	5	12	18	8
AEW CALBM	0	0	0	2	17	0
MR/MFA**	0	0	0	0	0	0
OCU/COIN/CCF	0	0	0	0	18	18
Other Combat Trainers	45	45	85	64?	75?	155
Transport Aircraft**	30	56	57	1	34	34
Tanker Aircraft	0	0	-	47	2	2
Total Helicopters	101	296	304	489	470	500
Armed Helicopters**	30	139	109	159	120	120
Other Helicopters**	71	157	195	330	350	380
Major SAM Launchers	-	-	270+	460	260?	340
Light SAM Launchers	-	-	120+	-	60?	200
AA Guns	-	-	-	-	-	0

Figure 2-13. Force Trends in Iraq (Part one).

<u>Category/Weapon</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>1998</u>
Total Naval Manpower	3,000	4,250	5,000	5,000	2,500	2,500
Major Surface Combatants						
Missile	0	0	0	(4+60)***	0	0
Other (training)	0	0	1	1	1	1-2
Patrol Craft						
Missile	3	12	15	8	1	1
Other	6	27	11	6	5-7	5-7
Submarines	0	0	0	0	0	0
Mine Vessels	2	5	8	8	4	4
Amphibious Ships	0	0	3	6	(3)	(3)
Landing Craft	-	-	3	-	-	-
Marines	0	0	0	0	0	0
Naval Guards	0	0	0	0	0	0
Naval Air	0	0	0	0	0	0
Naval Aircraft						
Fixed Wing Combat	0	0	0	0	0	0
MR/MPA	0	0	0	0	0	0
Armed Helicopters/SAR	0	0	0	0	0	0
Other Helicopters	0	0	0	0	0	0
<p>Note: Equipment in storage shown as higher figure in range. Air Force totals include all helicopters, and all heavy surface to air missile launchers.</p> <p>* Includes all types of armored vehicles except main battle tanks and self-propelled artillery.</p> <p>** Includes navy, army, national guard, and royal flights, but not paramilitary.</p> <p>*** Includes four Italian frigates and six corvettes on order, but never delivered.</p> <p>Adapted by Anthony H. Cordesman from interviews, International Institute for Strategic Studies, <u>Military Balance</u> (IISS, London); various data available from Jane's, <u>Military Technology</u>, <u>World Defense Almanac</u>; and Jaffee Center for Strategic Studies, <u>The Military Balance in the Middle East</u> (JCSS, Tel Aviv)</p>						

Figure 2-13. Force Trends in Iraq (Part Two) (continued).

	Tanks	APCs	Artillery
Total in KTO on January 16, 1991, at start of Air Campaign (Imagery)	3,475	3,080	2,474
Total left at beginning of the land campaign	2,087	2,151	1,322
Total destroyed or abandoned during the land campaign (USCENTCOM estimate)	2,159	521	1,465
Destroyed by air	(451)	(224)	(353)
Destroyed by land or abandoned	(1,708)	(297)	(1,112)
Total destroyed or abandoned during the land campaign (Imagery Based)	1,245	739	1,044
Total destroyed during air campaign and land offensive (Imagery Based)	2,633	1,668	2,196
Still in Iraqi Control on March 1, 1991 (Imagery)	842	1,412	279

Source: Adapted by Anthony H. Cordesman from interviews and work by Eliot Cohen, ed., *Gulf War Air Power Survey, Volume II, Section II*, pp. 259-261 and interviews.

Figure 2-14. The impact of Coalition Air and Land Forces on Iraq.

Equipment Strength in the Kuwaiti Theater of Cease-Fire.

[2-14](#) shows the impact of coalition forces on equipment left behind in the Kuwait: theater of operations (KTO) at the time of the ceasefire.

[Table 29](#) shows the Iraqi armed forces at the start of operation Desert Storm.

Table 29. Iraqi Armed Forces strength.

Army	350,000
Air Force	30,000
Air Defense	10,000
Navy	2,000

6. **Foreign Forces.** There were 400 foreign troops of UNIIMOG in Iraq/Iran from Austria (medical), Ireland (military police), New Zealand (Air Force), and observers from 25 countries prior to Operation Desert Storm. They were to monitor the Iran/Iraq border area. In August 1991 a UN observation team with personnel and equipment from US, UK, and Germany moved into Iraq to monitor the destruction of Iraqi nuclear research plans and equipment.

Lesson 2

Practice Exercise

Instructions The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

1. Which major LOC parallels the Tigris river?
☐ A. Al Qaim - Ar Ramadi - Safwan.
B. Mosul - Tikrit - Basra.
C. Rutba - Ash Shabakah - Safwan.
D. Ahvaz - Abadan - Al Faw.
2. How many divisions are in the Republican Guard?
A. 6
B. 8
C. 5
D. 7
3. Along whose lines was the Iraqi Army originally formed?
A. British.
B. French.
C. Turkish.
D. Iranian.
4. How many mechanized infantry and armored brigades are in an Iraqi Republican Guard mechanized infantry division when at full strength?
A. 1 x mechanized brigades and 1 x armored brigade.
B. 2 x mechanized brigades and 1 x armored brigades.
C. 2 x mechanized brigades and 2 armored brigades.
D. 3 x mechanized brigades and 1 x armored brigades.
5. In which Iraqi region is movement of tracked vehicles limited by wadis?
A. Upland plain.
B. Mountains.
C. Tigris-Euphrates-Shall al Arab System.
D. Desert.

LESSON 3

KUWAIT

Critical Task: None

OVERVIEW

LESSON DESCRIPTION:

In this lesson, you will learn to describe the history, weather, terrain, and LOCs; and identify the military capabilities of Kuwait.

Terminal Learning Objective:

- TASKS:** Describe the history, weather, terrain, and LOCs; and identify the military capabilities of Kuwait.
- CONDITIONS:** You will be given extracts from CIA WorldFactbook 1997, DA Pam 550-185, [FM 34-72](#) (Coordinating Draft), and IISS The Military Balance 1990-1991.
- STANDARDS:** Description of the history, weather, terrain, and LOCs; and identification of military capabilities of Kuwait will be in accordance with CIA World Factbook 1991, DA Pam 550-185, and [FM 34-72](#) (Coordinating Draft), and IISS The Military Balance 1990-1991.
- REFERENCES:** The material contained in this lesson was derived from the following publications:
- CIA World Factbook 1997.
- DA Pam 550-185.
- [FM 34-72](#) (Coordinating Draft).
- IISS The Military Balance 1990-1991

INTRODUCTION

This lesson is an attempt to treat in a concise and objective manner the military aspects of Kuwait. Information used in this lesson was obtained from unclassified sources. Military equipment is in ACCP Subcourses IS3010 and IS3011.

PART A. HISTORY, WEATHER, TERRAIN, AND LOCs OF KUWAIT

1. General Information. Kuwait (koo WAIT) is a small Arab country in southwestern Asia, at the north end of the Persian Gulf. This desert land is one of the world's leading petroleum producers. Kuwait is slightly larger than the state of Connecticut. The country's official name is the State of Kuwait and Arabic is the official language. The city of Kuwait is the capital and largest city. [Figure 3-1](#) is a country outline of Kuwait.

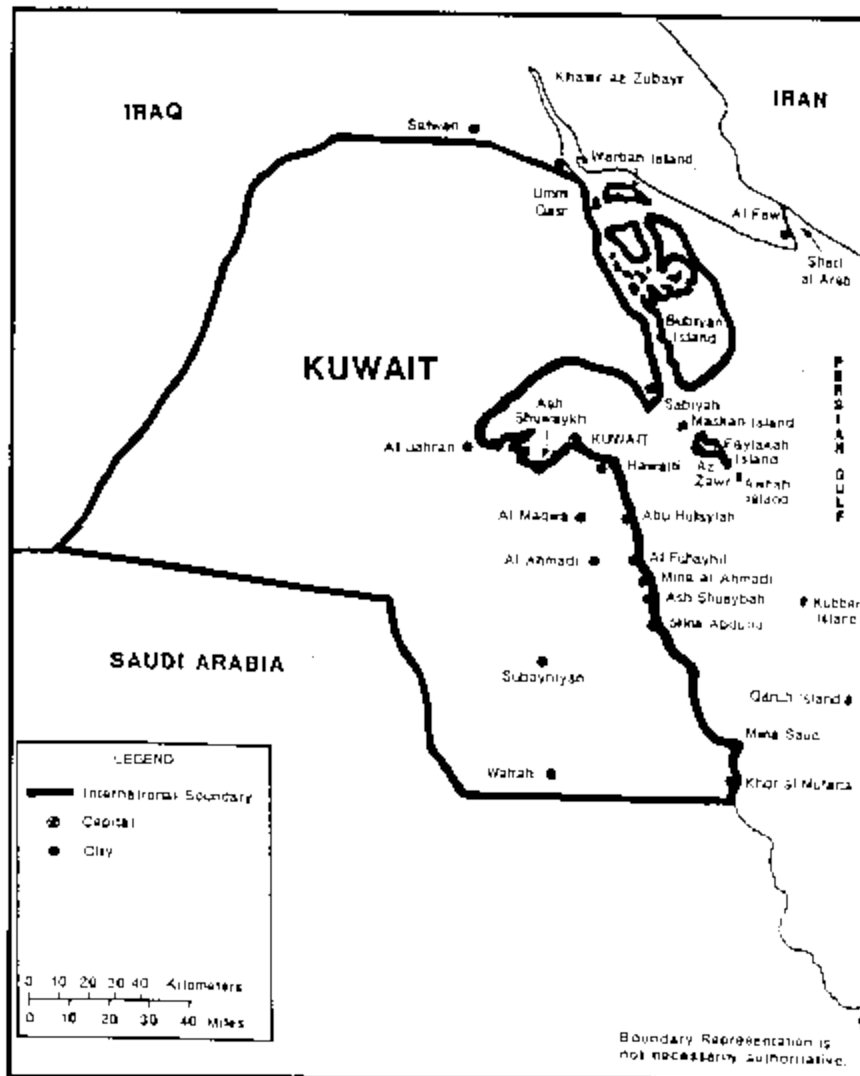


Figure 3-1. Kuwait.

2. Statistical data.

Name:	State of Kuwait (Daulat al Kuwait)
Capital:	Kuwait City
Population:	1,834,269 (July 1997)
Area:	17,829 km ²
Ethnic divisions:	27.9% Kuwaiti, 39% other Arabs, 9% South Asian, 4% Iranian, and 20% others

Language: Arabic, English commonly used
Literacy rate: 74%
Religion: 85% Muslim; 5% Christian, Hindu, and others
GNP: \$ 19.8 BILLION
Per capita income: \$ 9,700/annum
Unit of currency: Kuwaiti dinar (KD)
Exchange rate: \$ 1 - .29 KD
Time zone: Three hours ahead of UTC, eight hours ahead of US Eastern Standard Time; time zone CHARLIE
Defense forces: Army, Air Force, Navy, and paramilitary forces

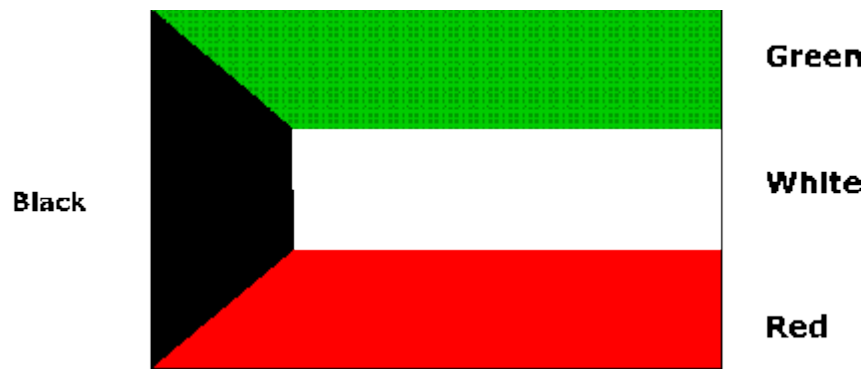


Figure 3-2. Flag of Kuwait.

3. History.

a. Historical background.

(1) Kuwait began as a small fishing and trading settlement along the northern coast of the Arabian Peninsula. From about 4000 to 2000 B.C., this region controlled the Persian Gulf route to the East Indies and was the trading link between the civilizations of the Indus Valley and Mesopotamia. Traders enriched the first civilizations in Mesopotamia, both commercially and culturally. Because of its distance from Mesopotamia, Kuwait was not affected by the continuous upheavals experienced by other areas of Southwest Asia.

(2) During the early 1700s, drought and famine caused mass migrations of Arab tribes to the north coastal lands of the Persian Gulf, presently the site of Kuwait. The Utub tribe migrated from Saudi Arabia in the 18th century and settled in a small town which they called Kuwait (fortress built near water), finding the mild climate a welcome change from the harsh desert. From the Utub tribe emerged the founders of present-day Kuwait.

(3) Kuwait came under British rule in 1889, at the time when British influence was displacing the Ottoman Empire. Britain assumed responsibility for Kuwait's foreign

affairs and provided protection from foreign intervention. Until the end of World War II, Kuwait was a poor, traditional kingdom whose people earned their living from fishing, pearling, and trading with Persian Gulf neighbors. After the war they began to exploit the oil that had been discovered in 1938. Britain no longer needed Kuwait as a military frontier, and the increased oil income and stabilization of Kuwait's internal rule enabled the British to grant independence on 19 June 1961.

b. Recent history.

(1) Since the attainment of full independence in 1961, the most significant political innovation has been the increased power and prestige of the popularly elected assembly. Furthermore, Kuwait is the only state on the Arabian peninsula that has established a modern legal system. By the 1970s Kuwait boasted the world's highest per capita income and a system of social services including public education, free medical care, government housing, and pensions. The enormous wealth derived from Kuwait's oil resources has financed the remodeling of government services, upgraded the armed forces, improved the physical development of the state's infrastructure, and has stimulated foreign investment.

(2) The "oil boom" caused a significant migration of foreigners to Kuwait initially creating a major problem for the government. Strict naturalization laws, however, prevented these noncitizens from increasing to 50% of the total population, and the government realized that the skills and manpower of the immigrants were essential for Kuwait's economic development. The Kuwaiti Government subsequently liberalized the naturalization laws and granted citizenship to a larger number of immigrants.

(3) At the Baghdad Summit in November 1978, Kuwait pressed for a consensus among the Arab nations condemning the Israeli-Egyptian peace agreement. By the 1980's Kuwait had adopted an active role in preserving Arab unity and along with Saudi Arabia, emerged as one of the Persian Gulf's dominating forces. Kuwait had some success in the role of mediator in the conflict between the People's Democratic Republic of Yemen and the Yemen Arab Republic. Kuwait was also instrumental in resolving a crisis in the United Arab Emirates (UAE).

(4) Kuwait supported Iraq in its war with Iran by contributing billions of dollars to the Iraqi war effort. However, Saddam Hussein threatened Kuwait with a takeover, unless Kuwait would join Iraqi efforts to raise oil prices. In August 1990, Iraqi troops invaded Kuwait and devastated this country, forcing about half the population to flee to Saudi Arabia. The United Nations passed 12 resolutions and urged Iraq to leave Kuwait by 15 January 1991, but to no avail. United States and multinational troops were rushed into Saudi Arabia in response to an urgent call from the rulers of Kuwait and Saudi Arabia. On 16 January 1991, the Gulf War started with thousands of bombing raids. On 23 February 1991, the ground war started and within 100 hours Kuwait was liberated. As the Iraqis retreated, much of Kuwait's industry, infrastructure, and buildings were destroyed. Among the most heavily damaged were places of the royal family,

government and other public buildings, oil wells, and roads. Since the war, Kuwait has been largely rebuilt. It will still take some years to repair the damage to the infrastructure and especially to repair the Iraqi destructions of the Kuwaiti petrochemical industry.

4. Weather.

a. Climate.

(1) The climate of Kuwait is somewhat less severe than in other parts of the Persian Gulf ([Table 30](#)). Intense humidity occurs in August. Sand and dust storms are frequent in the summer when the "shamal," a strong northeast wind, blows down the gulf from Iraq. The winter period from November to April is generally pleasant due to the abundance of sunshine; however, there can be periods of raw weather with cold temperatures and rather heavy rain (i.e., Desert Shield/Desert Storm).

(2) Rainfall varies from 8 to 15 cm a year throughout the country. Some years, however, actual rainfalls have ranged from 2.5 cm to as much as 33 cm with most of the rain falling during the winter months. Sea temperatures in the summer rise to over 32° in August, increasing the humidity on the coastal lowland. Further inland the climate is more favorable due to stronger winds and lower humidity.

Table 30. Annual Temperatures.

<u>REGION</u>	<u>WINTER</u>		<u>SUMMER</u>		<u>EXTREMES</u>	
	MIN	MAX	MIN	MAX	MIN	MAX
Kuwait (°C)	7°	17°	26°	43°	-1°	48°
(F°)	45°	63°	80°	110°	30°	118°

b. Light tables. Light tables reflect the average times by month of sunrise and sunset. At the times shown in [Table 31](#), general outlines of the horizon may be visible but ordinarily cannot be distinguished.

Table 31. Light Table.

<u>KUWAIT, KUWAIT</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0642	0637	0614	0538	0507	0449	0452	0508	0525	0541	0600	0624
<u>SUNSET</u>											
1701	1726	1747	1806	1824	1842	1851	1840	1811	1734	1702	1649

5. Terrain.

a. Terrain features.

(1) Located at the northwestern corner of the Persian Gulf, Kuwait is bounded on the east by the Persian Gulf, on the north and west by Iraq, and on the south and southwest by Saudi Arabia ([Figure 3-3](#)). The area of the state is about 17,829 km² including offshore islands. There are a number of offshore islands, the largest of which is Bubiyan, separated from the mainland by a narrow waterway, Khawr al Sabiyah. The country's only prominent geographic feature is Kuwait Bay, which indents the shoreline for about 40 km and provides natural protection for the port of Kuwait.

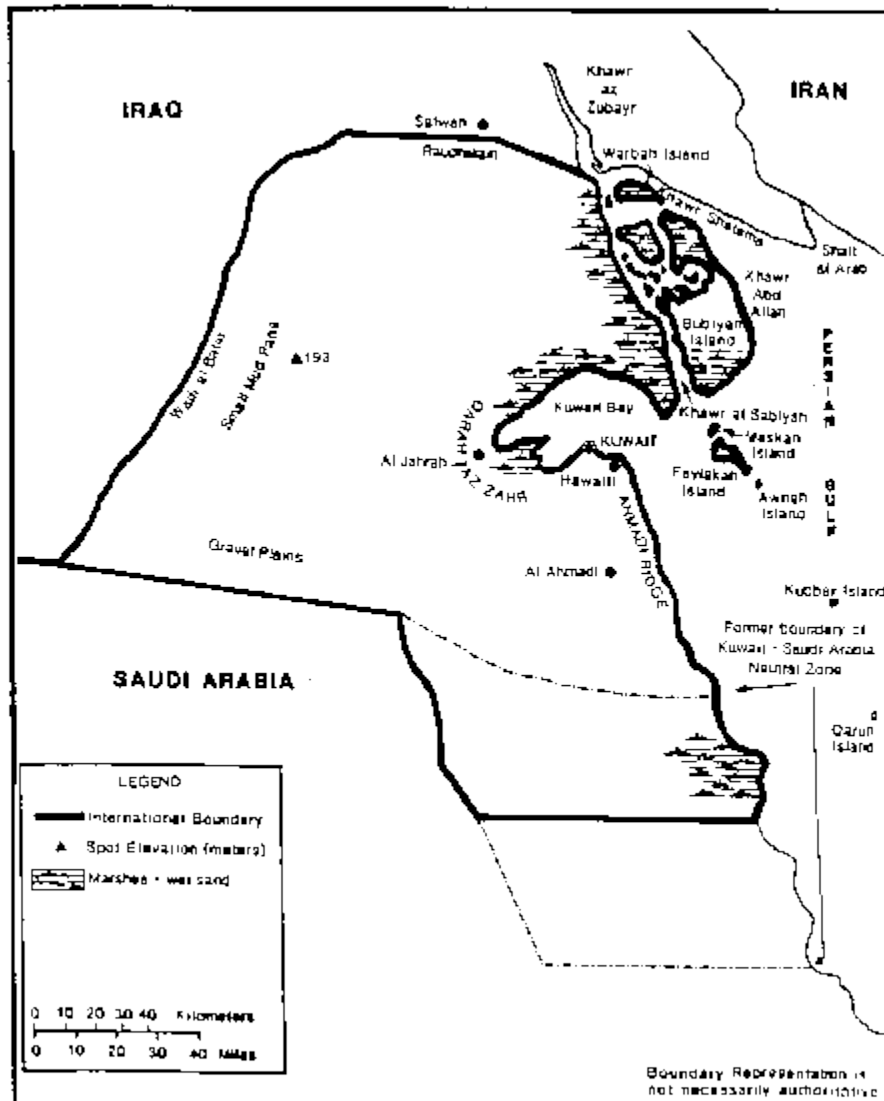


Figure 3-3. Terrain Features of Kuwait.

(2) The northern border with Iraq was secured through an agreement with Turkey in 1913. Although the agreement was never formally ratified, it was accepted by Iraq in 1932. In the 1960s and 1970s Iraq made various attempts to claim the Kuwait territory. The boundary with Saudi Arabia was set by the Treaty of Uqair in 1922, which also established the 5,700 km² Kuwait-Saudi Arabia Neutral Zone. In 1966 Kuwait and Saudi Arabia divided the neutral zone and in 1969 each country became responsible for its own portion of the zone. A 3,520 km² neutral zone had been established west of the

quadripoint with Iraq, Kuwait, and Saudi Arabia, that had been jointly administered by Iraq and Saudi Arabia. In December 1981, Iraq and Saudi Arabia signed an agreement to divide the zone between them, but the agreement was not ratified. However, since Desert Shield began, all maps have eliminated this zone. Boundaries are now aligned along the facto boundary that divides the zone through the middle.

(3) Most of Kuwait consists of desert. There is one small oasis, Al Jahrah, at the western end of Kuwait Bay and a few water wells in the coastal villages. The Wadi al Batin, a broad shallow valley, forms the western boundary of Kuwait. At Raudhatain in the north, several shallow wadis converge the area and provide a temporary repository for winter floodwaters which quickly evaporate or are absorbed into the porous subsoil. There is a continual redistribution of topsoil caused by flood runoff and erosion.

(4) The Kuwaiti desert is undulating and gravelly with a few low hills or ridges like the Qarah az Zahr scarp west of Kuwait Bay. The 18 km-wide coastal plain is separated from the central part of the country by the 120 m-high Ahmadi Ridge that runs north and south. The only trees, aside from those in the date gardens at Al Jahrah, are tamariks in Kuwait City and a few nearby villages. Arfaj, the most common desert shrub, grows in the vicinity of the Wadi al Batin. It reaches a maximum height of slightly over .5 m and is used for firewood by nomadic tribesmen.

(5) Kuwait has numerous islands within its territorial waters. Warbah Island is a low-lying land mass which is separated from Iraq by the narrow Khawr Shatama channels. The island is 13 km long and is covered by rough grasses and reeds. Bubiyan Island lies south of Warbah and is separated from the Kuwait mainland by the Khawr al Sabiyah channel. The island is 43.5 km long and 25 km wide and has low terrain and swampy shores. The northwestern portion of Bubiyan is partly submerged at high tide and there is a mud flat which extends southeast of the island. The islands of Faylakah and Maskan are located on this mud flat. Faylakah is low and sandy; it is 11 km long by 5 km wide and is the only island that is inhabited. Maskan, Awhah, Kubbar, and Qaruh are quite small, and Kuwaiti ownership of Qaruh is disputed by Saudi Arabia. Trafficability in Kuwait is discussed at [Table 32](#).

Table 32. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Northern Kuwait	Good mobility with occasional shallow wadis and marshy areas which may need to be bypassed.	Fair mobility on existing roads; poor cross country	See FM 90-3 , Desert Operations
Southern Kuwait	Good mobility; some restriction due to industrial facilities and pipelines near the coast; inland, few restrictions.	Good mobility on existing hard surface roads; fair mobility cross country on existing tracks and trails.	Same

b. Urban area.

(1) Overlooking Kuwait Bay is Kuwait City--capitol, chief port, and commercial center of the country. Half of the country's population lives in Kuwait City and its suburbs, which include the town of Hawalli. The metropolitan appearance of this modern city is in remarkable contrast with the surrounding desert. The city extends 24 km along the south side of Kuwait Bay and 10 km inland; it forms a concentric pattern from the original main gate of the old city. Trees and shrubs have been planted in the city and the surrounding suburbs as part of a program that seeks not only to beautify but to screen the metropolitan area against summer sandstorms.

(2) The only other town of major note is Al Ahmadi, the headquarters of the Kuwait Oil Company.

c. Coast and beaches. Kuwait has 499 km of coastline, 212 km on the mainland, and 287 km on the outlying islands. The beachfront along Kuwait Bay is excellent and accounts for 40 km of the mainland coastline. The sandy southern portion of the coast is in direct contrast to the swampland found to the north of Al Jahrah. The country's territorial waters extend 12 nm. Coast and beach access to Kuwait is discussed in [Table 33](#).

Table 33. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Kuwait Bay and north coast	Extensive marsh areas along most of Kuwait Bay and on the north coast make these areas poorly suited for large scale amphibious operations. Inland dunes which overlook the beaches would hinder deployment.	This area is remote from the strategically important areas for of Kuwait, but is close to the Shall al Arab and important Iraqi and Iranian refineries.
Kuwait City area and south coast	Wide gentle beaches are suitable for large scale amphibious operations. The deep water entrance to Kuwait Harbor provides access for naval support.	This area contains strategically important refineries, industrial facilities, and oil tanker ports.

6. LOCs.

a. Roads. Kuwait has a well-developed road network that links the urban areas and oil fields. [Tables 34](#) and [35](#) show the road network and main routes. [Figure 3-4](#) locates the LOCs. A four-lane highway is under construction to upgrade the present route to Riyadh, Saudi Arabia via Damman. A 2.4 km bridge from Sabiyah to Bubiyan Island is in the planning stages.

b. Railroads. Kuwait does not have a rail network.

Table 34. Road network.

<u>TYPE</u>	<u>LENGTH</u>
Paved	2,585 km
General and improved earth	500 km

Table 35. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Kuwait City-Al Jahrah-Safwan-Basra (Iraq)	150 km	None
Kuwait City-Al Jahrah-Al Batin (Saudi Arabia)	240 km	None
Kuwait City-Al Ahmadi Mina al Ahmadi	35 km	Four-lane highway
Kuwait City – Houalli to Mina al Ahmadi	90 km	Divided four lane Mina Saud highway to Mina al Ahmadi

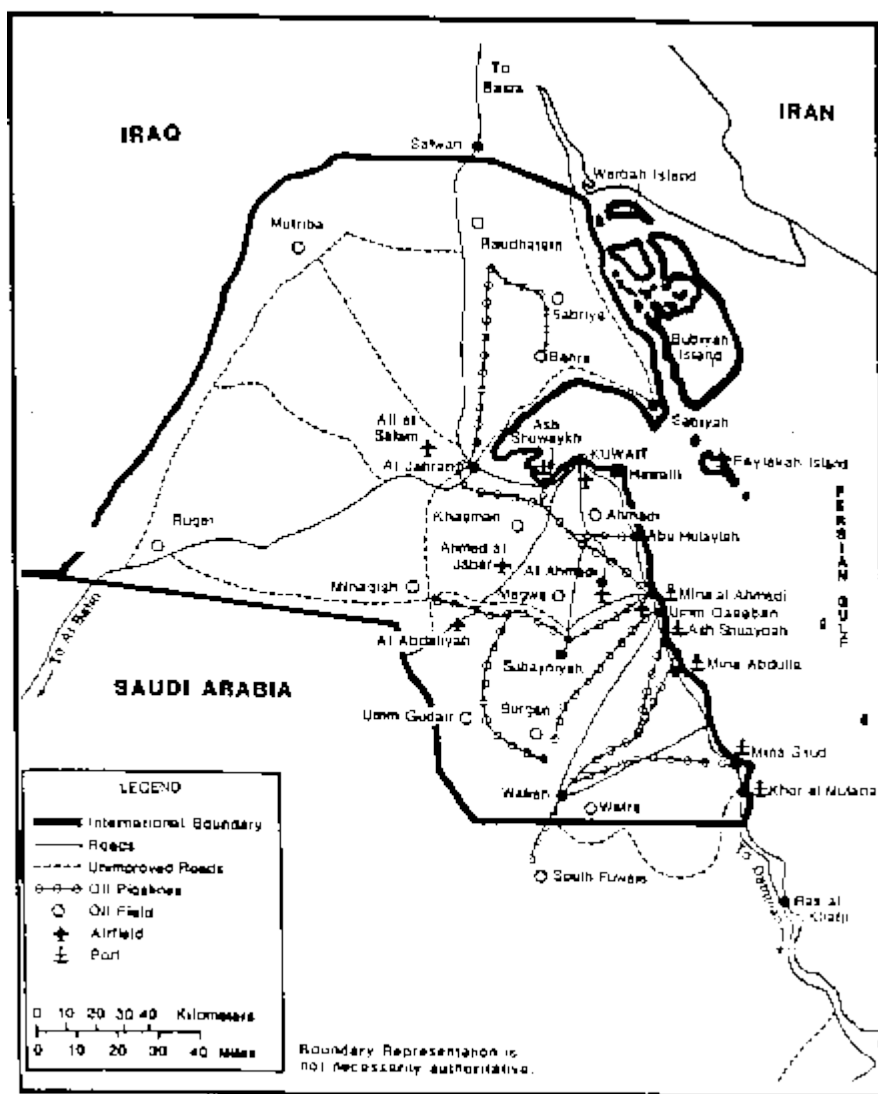


Figure 3-4. Roads and Pipelines of Kuwait.

c. Ports. Kuwait has three major ports located at Ash Shuwaykh, Ash Shuaybah, and Mina al Ahmadi. A lesser port is located at Khor al Mufatta, and two oil terminals are at Mina Abdulla and Mina Saud. [Figure 3-4](#) identifies their locations, and Table 36 lists Kuwaiti ports and their capabilities. Kuwait shipping services provide primarily petroleum and cargo services.

d. Air transportation. Kuwait has its own airline--Kuwait Airways Corporation--headquartered at the Kuwait International Airport in Kuwait City. The air transportation network is depicted in [Table 37](#). Key airfields are identified in [Figure 3-4](#) and [Table 38](#).

e. Water transportation. Kuwait has no inland waterways or bodies of water.

f. Pipelines. The pipeline network is depicted in [Figure 3-4](#).

Table 36. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Ash Shuwaykh	Major port; 3 km W of Kuwait City; 18 deep-water berths, 13 shallow berths, 2 moorings; 3 small craft basins; roll-on/roll-off; crane and cargo storage available; full provisioning*; 9 additional berths under development.
Ash Shuaybah	Major port; 50 km S of Kuwait City; 5 berths on main quay; 10 berths on a breakwater; roll-on/roll-off and container facilities; full provisioning; 5 additional berths and small craft basis being developed.
Mina al Ahmadi	Main Kuwaiti cargo and oil terminal; 40 km S of Kuwait City; 2 piers; 10 berths at S pier and 4 berths at N pier; 2-berth sea island terminal (approximately 11 km at sea); full provisioning.
Khor al Mufatta	Open anchorage; no provisions available.
Mina Abdulla	Offshore oil terminal; 2 berths; limited fuel available.
Mina Saud	Oil tanker terminal; 2 berths; fuel only.
* Includes fuel, fresh water, and food.	

Table 37. Air transportation network.

<u>AIRFIELDS</u>	7 (4 usable)
Runway type	
Permanent surface	4
Unpaved fields and usable airstrips	1
Unusable airstrips	2
Runway length*	
2,440-3,659 m	4
1,220-2,439 m	0
Under 1,220	0
NOTE: Runway lengths are for paved and unpaved usable airfields only.	

Table 38. Airfields

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
AL Ahmadi Kuwait	Oil company field; 3.6 km S of Al Ahmadi; used by light transport and utility aircraft.
Ahmed al Jabar	Main Kuwait Air Force base; 33 km SW of Al Ahmadi; two 3,600m runways (estimated); sited in sandy desert area; no further unclassified information.
Al Abdaliyah	Emergency highway strip; 40 km SW of Kuwait City; one 3,050 m highway strip asphalt runway for emergency use only.
Ali al Salam	Kuwait Air Force field; 40 km W of Kuwait City; two 3,650 m runways; sited on a level desert plateau; used by Kuwaiti Air Force; fighter aircraft and attack helicopter operating base; also known as Kuwait West.
Kuwait International	Main civil aviation terminal; 15 km S of Kuwait City; one 3,400 m concrete and one 3,200 m asphalt runway; sited on a sandy desert; joint use facility for military, national, and international traffic; one of the most modern airfields in Southwest Asia; lies in an exceptionally strategic location.
Umm Qasabah	Controlling agency unknown; located 43 km SE of Kuwait City; one 1,100 m sand runway; sited on a flat sandy coastal plain; major refinery located 3.5 km north of airfield.
Faylakah helicopter pad	30 m concrete landing pad on Faylakah Island; no further information.

PART B: MILITARY CAPABILITIES OF KUWAIT

1. Background. The Kuwaiti Armed Forces were formed with British assistance after World War II. Occasional border difficulties with Iraq and concern for Kuwaiti independence were causes for continuous expansion of the Armed Forces. Over the years Kuwait has modernized its Armed Forces by purchasing equipment from a variety of nations. The armed forces have had to be rebuilt from the debacle of the Iraqi invasion and have declined from a total strength of 20,300 before the invasion to an estimated 15,300 in 1996. The chief of staff stated in 1996 that the emirate was at least three to five years away from achieving its objective of being able to counter an Iraqi incursion. Re-equipment has involved new aircraft for the air force, new patrol craft and new tanks and personnel carriers for the ground forces. As late as January 1997 Kuwait claimed that Iraq still holds hundreds of millions of dollars worth of captured Kuwaiti equipment.

2. Command structure. The defense structure is headed by the EMIR, who is Commander-in-Chief. The line of command runs through the Chief of Staff and the Deputy Chief of Staff, both of whom are princes of the Al-Sabah royal family ([Figure 3-5](#)).

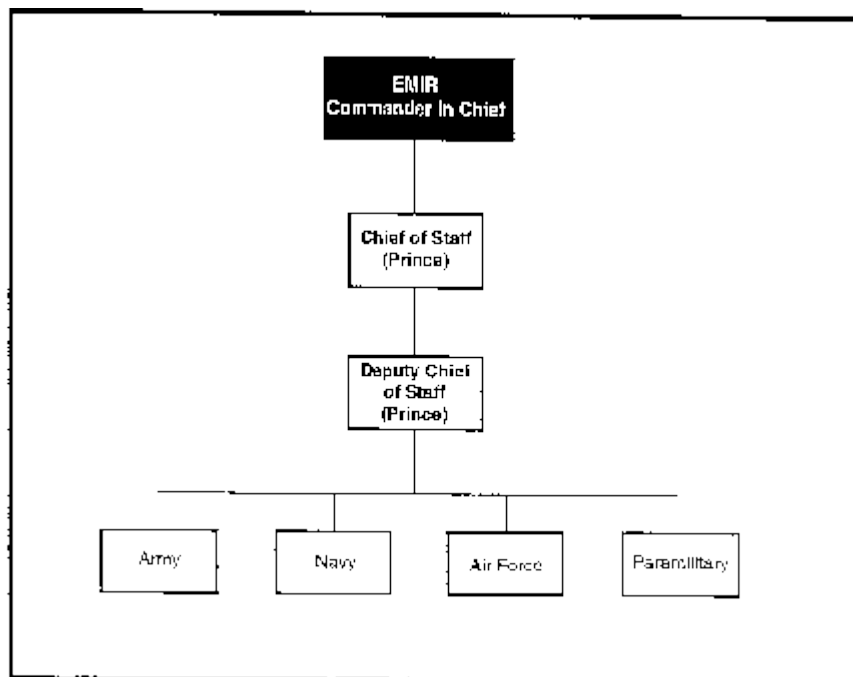


Figure 3-5. Kuwaiti Armed Forces command structure.

3. Armed Forces. The primary mission of the armed forces is to protect the country against internal or external threat. The Armed Forces of Kuwait consist of the Army, Air Force, Navy, and paramilitary see [table 39](#). Following the liberation, the Kuwaiti Army has been reorganized into five fighting brigades, with an additional reconnaissance brigade. The brigades are basically cadre forces (kept at up to 80% of full strength), with full wartime strength being formed from reserves.

Table 39. Kuwaiti Army

3 x Armored brigades (Figure 3-6 and 3-7)
1 x Mechanized infantry brigade (Figure 3-8)
1 x SSM battalion with FROG-7
1 x Artillery brigade with self-propelled (SP) guns
1 x Tactical reserve brigade (forming)

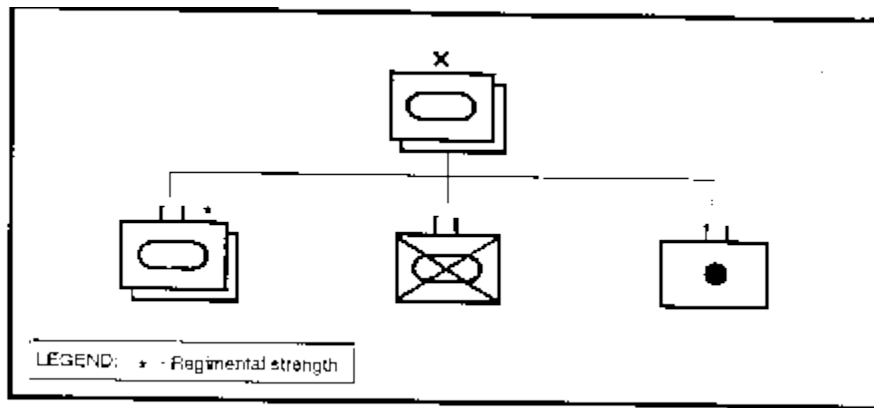


Figure 3-6. Two of the Kuwaiti armored brigades.

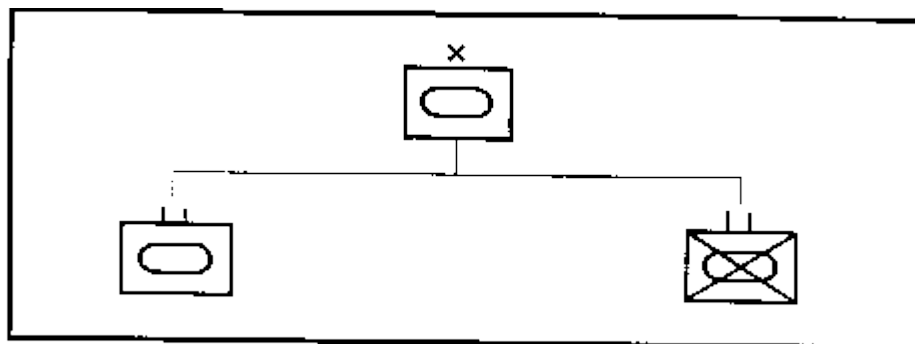


Figure 3-7. One of the Kuwaiti armored brigades.

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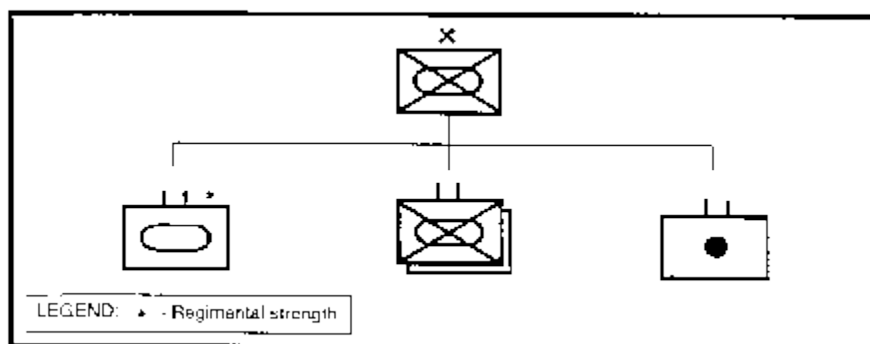


Figure 3-8. Kuwaiti mechanized infantry brigade.

a. The Kuwaiti Air Force has been reorganized and fundamentally rebuilt since 1991. The air force headquarters at Kuwait City is also responsible for air defense. These forces do not represent, in themselves, a significant threat to Kuwait's neighbors but will be used to support ground operations. The Kuwaiti Air Force is organized as shown in [Table 40](#). Military airfields are at Ahmed al Jabar and Ali al Salam ([Table 39](#) and [Figure 3-4](#)).

Table 40. Kuwaiti Air Force units.

2 x Fighter squadrons
1 x Training squadron
3 x Helicopter squadrons
1 x SAM battalion with improved Hawk

b. The Kuwait Navy suffered badly during the Iraqi invasion and occupation. Iraq returned the majority of the vessels that survived the Gulf War in 1993 but they were in poor condition and were subsequently scrapped. It has not received the same level of support for the rebuilding process as the land and air forces. The main naval base at Ras Al Jalaya is to be rebuilt at an estimated cost of US \$300 million. The Kuwaiti Navy has the following equipment ([Table 41](#)). 2 x commando battalions of Marines are attached to the Navy. Naval bases are at Mina al Ahmadi and Shuwaykh ([Figure 3-4](#)).

Table 41. Kuwaiti Navy equipment.

8 x Missile craft
15 x Inshore patrol craft
4 x Amphibious craft
3 x Coastal support ships

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c. Paramilitary forces consist of a National Guard. Their primary duties are to guard the palace and the national border.

d. Kuwaiti Armed Forces manpower is shown in [Table 42](#).

Table 42. Kuwaiti Armed Forces strength.

Army	16,000
Air Force	2,200
Navy	2,100
Paramilitary	<u>7,000</u>
Total	27,300

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Lesson 3

Practice Exercise

Instructions

The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

1. What are the duties of the Kuwaiti National Guard?
 - ☐ A. Guard the airfields.
 - B. Guard the naval bases.
 - C. Guard the palace and borders.
 - D. Guard the railroad stations.
2. What separates the 18-km wide coastal plain from the central part of Kuwait?
 - A. Garah az Zahr.
 - B. Ahmadi ridge.
 - C. Khawr Shatama.
 - D. Bubiyan.
3. Which is a major Kuwaiti port?
 - A. Ash Shuaybah.
 - B. Khor al Mufatta.
 - C. Mina Saud.
 - D. Mina Abdulla.
4. When did Kuwait come under British rule.
 - A. 1700.
 - B. 1889.
 - C. 1938.
 - D. 1980

5. What trafficability pertains to tracked vehicles in northern Kuwait?
- A. Poor cross country travel.
 - B. Fair with minor restrictions.
 - C. Good with occasional shallow wadis and marshy areas.
 - D. Good with some restrictions due to industrial facilities.
-

LESSON 4

SAUDI ARABIA

Critical Task: None

OVERVIEW

LESSON DESCRIPTION:

In this lesson, you will learn to describe the history, weather, terrain, and LOCs; and identify the military capabilities of Saudi Arabia.

Terminal Learning Objective:

- TASKS:** Describe the history, weather, terrain, and LOCs; and identify the military capabilities of Saudi Arabia.
- CONDITIONS:** You will be given extracts from CIA World Factbook 1997, DA Pam 550-51, [FM 34-72](#) (Coordinating Draft), and IISS The Military Balance 1990-1991.
- STANDARDS:** Description of the history, weather, terrain, and LOCs; and identification of military capabilities of Saudi Arabia will be in accordance with CIA World Factbook 1997, DA Pam 550-51, [FM 34-72](#) (Coordinating Draft), and IISS The Military Balance 1990-1991
- REFERENCES:** The material contained in this lesson is derived from the following publications:
- CIA World Factbook 1997.
- DA Pam 550-51.
- [FM 34-72](#) (Coordinating Draft).
- IISS The Military Balance 1990-1991.

INTRODUCTION

This lesson is an attempt to treat in a concise and objective manner the military aspects of Saudi Arabia. Information used in this lesson was obtained from unclassified sources. Military equipment is in ACCP Subcourses IS3010 and IS3011.

PART A: HISTORY, WEATHER, TERRAIN, AND LOCs OF SAUDI ARABIA

1. General information. Saudi (suh 00 dee) Arabia is a large desert kingdom of mountains, plateaus, and rocky plains which cover three fourths of the Arabian Peninsula in southwestern Asia. The Saudi Arabian landmass is over three times larger than the state of Texas and holds about one fourth of the world's oil reserves. The name of the country in Arabic is Arabyah as-Sa'udiyah, meaning "Kingdom of Saudi Arabia." Riyadh is the capital and largest city. [Figure 4-1](#) is a country outline of Saudi Arabia.

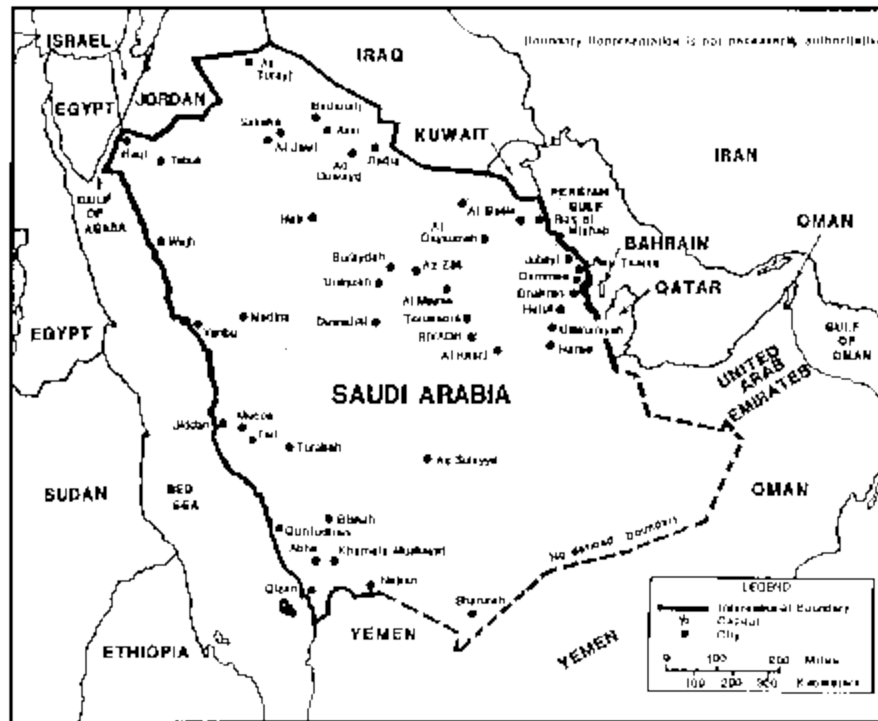


Figure 4-1. Saudi Arabia.

2. Statistical Data.

Name:	Kingdom of Saudi Arabia
Capital:	Riyadh (royal), Jiddah (diplomatic)
Population:	20,087,965 (July 1997)
Area:	1,960,582
Ethnic divisions:	90% Arab, 10% Afro-Asian
Literacy rate:	62%
Religion:	Islam
Language:	Arabic
GNP:	\$ 79 billion
Per capita income:	\$ 4,800/annum
Unit of currency:	Saudi rial (SR)
Exchange rate:	\$ 1 - 3.745 SR
Time zone:	Solar time - each day begins at sunset when timepieces are reset to 12 am. For example, Sunday night in the West is considered to be Monday evening in Saudi

Arabia. For international purposes, time is eight hours ahead of US Eastern Standard Time; three hours ahead of UTC time; time zone CHARLIE

Defense forces: Army, Air Force, Navy, Air Defense, National Guard, and paramilitary Flag

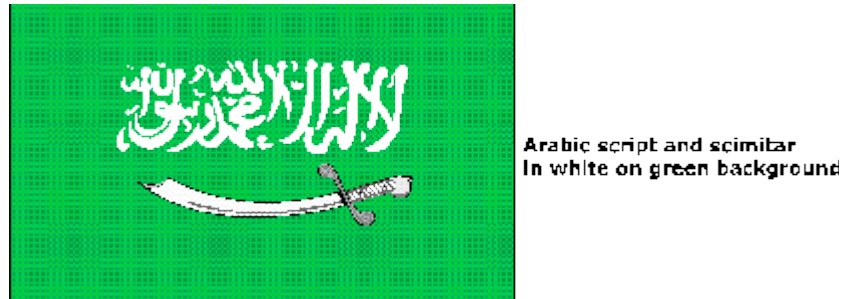


Figure 4-2. Flag of Saudi Arabia.

3. History.

a. Historical background.

(1) Recorded civilization in Saudi Arabia dates to 5000 B.C., but until approximately 3000 B.C. the country was only sparsely inhabited. Due to climatic conditions and the desert's slow encroachment upon the land, many of the original people inhabiting Saudi Arabia migrated to other areas of the Middle East. The people of southern Arabia, however, developed a complex commercial network of both land and sea routes and became the middlemen for trade from India and the Horn of Africa. The Indian Ocean trade was carried to Aden by ships and then by overland transportation to the markets of the western Mediterranean coast, Mesopotamia, and Egypt. A slow but inevitable decline in trade began in the fourth century when the Bedouins and other transients of the caravan cities began raiding the trade routes. These raiding wars soon proved too costly for both sides and were ended.

(2) The influence of the prophet Muhammad and the spread of the Islamic faith began about 610 and gained momentum after Muhammad's death in 632.

(3) The Saud clan moved to the Najd Oasis about 1450. Gradually the clan prospered and branches of the clan spread to other parts of the Najd. A series of intermarriages, the most important being clan leader Muhammad bin Sauds to the daughter of Muhammad bin Abd al Wahhab, an Islamic religious leader, cemented the relationship of the clans. By the time of Saud's death in 1765, most of the Najd supported Wahhab. Wahhab renewed his alliance with the new sheik, Abd al Aziz, and together they took the city of Riyadh.

(4) By the time of Wahhab's death in 1792, the Wahhabis had established control south to the Rub al Khali (Empty Quarter) Desert. Tribal feuds were regulated by mediators of the central Wahhabi authority. The area was pacified under the watchful eyes of district

governors and deputies stationed in moated forts outside captured towns. The Saudi-Wahhabi were not to rule without clashes, however. In the period of 1824-1834, organized troops ousted the Ottomans who had occupied the Najd. Under Turki bin Abdallah, the integrity of Saudi-Wahhabi rule was protected and oppressive governors who neglected to establish true Islamic rule were dealt with severely.

(5) After Turki's assassination in 1834, Turki's son Faisal took the reins of government. Battles continued for the next century, many of which were between brothes of the ruling families.

(6) Abd al Aziz's tact, personal charm, sense of justice, and deep concern for his people were to be the means with which he would bring the Saudis through conflicts, wars, and compromises to eventual sovereignty. His rule as king of Saudi Arabia lasted until his death in 1953.

b. Recent History.

(1) In 1932 the tribes of the greater portion of the Arabian peninsula were united into the Kingdom of Saudi Arabia. The new kingdom was generally viewed as that of an empty desert region ruled by a warrior family whose members were strict adherents of an orthodox Islamic sect. Saudi Arabia nevertheless possessed significance because of the two holy cities of Islam--Mecca and Medina--and was of interest to international oil companies as an area for oil exploration. Since the discovery of oil in 1938, Saudi Arabia has moved into the position of the world's largest oil exporter. The country's external interest and internal changes have caused a high degree of concern to the rest of the world.

(2) In 1964 Faisal ascended the throne in place of his deposed brother Saud. Faisal was faced with the task of transforming a nearly bankrupt nation with a legacy of tribal attitudes and traditions, into a modern state, while placating the opposing forces of religious conservatism and modernization. By the time of his death in 1975, Faisal had managed to ensure that the vast wealth of his country would be directed toward long term industrial and social welfare programs that would eventually benefit all sectors of the society. These programs also helped to establish Saudi Arabia as a permanent and important power in the Arab world and in the international community. Faisal accomplished all this without seriously offending tribal sensitivities and, at the same time, retained the traditional base of his family's power and the conservative orientation of the society. King Faisal was assassinated in 1975 and was immediately succeeded by Crown Prince Khalid. King Khalid followed many of Faisal's policies in trying to maintain a safe and stable environment in his own country, was well as in the Arab world. The Saudis have built up their military force to protect their own region, and they have provided substantial financial aid to help stabilize other Arab countries. Massive Saudi subsidies have been a great help to Egypt, Jordan, Syria, Oman, Morocco, Sudan, and Somalia. Yemen is a virtual Saudi pensioner.

(3) Saudi Arabia remains one of the most conservative countries of the Arab world. With increasing tensions in the area in the past few years, the Saudi royal family has concentrated efforts on the internal security of the country.

(4) In August 1990, Saudi Arabia felt threatened by the Iraqi invasion of Kuwait and asked the US to assist them in their effort to deter Iraqi forces from entering Saudi Arabia. US and multinational troops were rushed into Saudi Arabia. On 23 February 1991, the ground war started and within 100 hours Kuwait was liberated by US and multinational forces including Saudi Arabian troops.

(5) Political reforms decreed by King Fahd in 1992 established a consultative council to serve in an advisory capacity, provided for a bill of rights, and changed the rules of succession. The consultative council, called the Shura Council, was convened for the first time in December 1993. Social reforms are less evident, however. In 1993 Saudi authorities disbanded a committee for the protection of human rights, which relocated to London the following year. As of 1994, Saudi men and women were not permitted to attend public events together, and workplaces remained segregated. Government officials in the United States voiced continuing concern about human rights violations in Saudi Arabia, particularly the abuse of prisoners by guards and police.

(6) King Fahd remained an active sponsor of Islamic causes worldwide in his second decade as Saudi leader. In 1992 Fahd conducted an extensive campaign to end the bloodshed in the former Yugoslav Republic of Bosnia; his efforts included a national fund-raiser to provide aid to Bosnian Muslims, to diplomatic links with the Muslim Republics formerly included in the Union of Soviet Socialist Republics: Tajikistan, Turkmenistan, and Uzbekistan. In January 1994, Palestine Liberation Organization Chairman Yasir Arafat visited Riyadh to discuss with King Fahd the prospects for Middle East peace. The meeting represented a significant reestablishment of relations between the two leaders, whose relations had been strained since the Persian Gulf War. In March 1991, Fahd chose not to receive Jordan's King Hussein, who was visiting Mecca for the annual haj (pilgrimage). Relations between the Arab leaders had been unfriendly due to Jordan's support for Iraq during its invasion of Kuwait.

(7) In February 1995 the governments of Saudi Arabia and Yemen agreed to negotiate a settlement to their long-standing dispute over their shared border; the agreement followed several months of small-scale fighting in the border region. As of May 1996 the two countries had not decided on a formal border. After suffering a stroke in November 1995, Fahd gave control of the country to his half-brother, Crown Prince Abdullah, in January 1996. In February, however, Fahd reclaimed his authority.

4. Weather.

a. Climate.

(1) Saudi Arabia's predominately arid climate is characterized by extreme heat during the day, an abrupt drop in temperature at night and by periods of slight and erratic

rainfall ([Table 43](#)). Because of the influence of a prevailing sub-tropical high-pressure system and the many fluctuations in elevation, temperature and humidity vary considerably.

(2) Along the coastal regions of the Red Sea, a sub-tropical climate exists in the south and a semi-arid climate prevails in the north. The summer, at 10 months, is the longest season of the year and the temperatures are often tempered by sunset sea breezes. Winters are mild and are comparable to the spring and summer season of the Mediterranean Sea coasts. Around Jiddah and northward along the coast, rainfall is infrequent except for a period of heavy rainstorms between November and February. The area south of Jiddah in the Asir range is subject to Indian Ocean monsoons, which occur between October and March. These monsoons produce an average of 30 cm rainfall out of an annual total of 50 to 76 cm.

(3) In eastern Saudi Arabia long the Persian Gulf, the climate is more desert-like. The summer is seven months long with July and August being extremely hot. The annual rainfall of only 8 to 18 cm is usually concentrated in heavy showers during November and February.

(4) Both the Red Sea and Persian Gulf coasts have relatively high humidity, usually over 85% and frequently reaching 100%. The combination of warm air and high humidity produces a hot mist during the day and a warm fog at night. The prevailing winds are generally from the north. The presence of the winds makes the coastal areas more bearable in the summer and even pleasant in the winter. A southerly wind accompanied by an increase in temperature and humidity produces a particular kind of storm known in the Persian Gulf area as "kauf." In late spring and early summer, a strong northwesterly wind known as the "shamal" creates severe conditions in eastern Arabia with sand and dust storms that often reduce visibility to a few feet.

(5) A uniform climate prevails in the Najd and the great deserts. The heat becomes intense shortly after sunrise and lasts until sunset. This is followed by comparatively cool nights. In the winter the almost total absence of humidity and presence of a high wind-chill factor produce a bitterly cold atmosphere. For these portions of the country, rainfall is minimal and erratic. The entire rainfall may be the product of one or two torrential outbursts that flood the wadis and then rapidly disappear into the soil to be trapped above the layers of impervious rock. Although the average desert area rainfall is 10 cm, whole regions may not experience rainfall for several years. Dust storms are common throughout Saudi Arabia with some sandstorms lasting up to four days.

Table 43. Annual temperatures.

<u>REGION</u>	<u>WINTER</u>		<u>SUMMER</u>		<u>EXTREMES</u>	
	MIN	MAX	MIN	MAX	MIN	MAX
Red Sea Coast	18°	29°	21°	38°	8°	45°
Eastern Arabia	11°	21°	26°	43°	4°	54°
Najd (Middle Arabia)	4°	21°	23°	41°	-8°	50°
Deserts	2°	27°	21°	44°	-6°	54°

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset. At the times shown in [Table 44](#), general outlines may be visible; but the horizon is not likely to be distinguishable.

Table 44

<u>RIYADH, SAUDI ARABIA</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0637	0636	0616	0545	0518	0504	0507	0521	0534	0545	0600	0620
<u>SUNSET</u>											
1716	1738	1755	1809	1823	1838	1846	1838	1812	1741	1713	1704

5. Terrain.

a. Terrain features.

(1) Saudi Arabia occupies approximately 75% of the Arabian Peninsula, an area equivalent to the US east of the Mississippi. Since the country's boundaries are generally undefined, its exact size is unknown. The Saudi Arabian landmass has 98% desert, waste, or urban; 1% agricultural; and 1% forest. The country is bounded by eight countries and three bodies of water; to the west by the Gulf of Aqaba, the Red Sea, and Yemen; to the north by Jordan, Iraq, and Kuwait; to the east by the Persian Gulf, Bahrain, Qatar, and the United Arab Emirates; and to the south by Oman and Yemen. Saudi Arabia is divided into five regions; the mountain ranges of Hejaz and Asir, the plateau area of the Najd, northern Arabia, Al Hasa (eastern Arabia), and the deserts ([Figure 4-3](#)). Trafficability in Saudi Arabia is evaluated in [Table 45](#).

(2) The mountain ranges of Hejaz and Asir parallel the Red Sea. The two ranges are separated by a gap in the vicinity of Mecca. The northern range, seldom exceeds 2,134 m and the elevation gradually decreases to about 610 m in the south around Mecca. The mountain wall is rugged, dropping abruptly to the sea, and has few and intermittent coastal plains. natural harbors are rare along the Red Sea coast. The western slopes have been stripped of soil by the erosion of infrequent, but turbulent rainfalls that have

fertilized the plains to the east. The eastern slopes are less steep and are shaped by wadis that mark the courses of ancient rivers and provide a rain runoff through leading to the plains. Scattered oasis drawing water from springs and wells in the vicinity of these wadis permit some permanent agriculture. Of these, the largest and most important is the Medina Oasis.

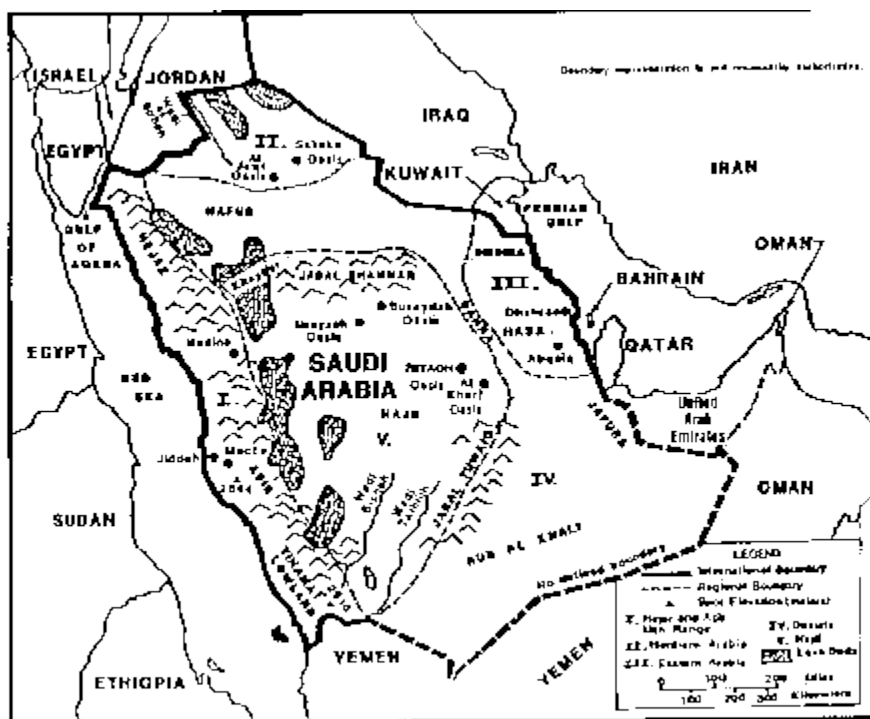


Figure 4-3. Terrain features/natural regions of Saudi Arabia.

Table 45. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Hejaz and Asir/Red Sea Coastline	The ranges are separated from the sea by a rugged mountain wall; terrain within the mountains is suitable for tactical operations with occasional channelization through passes and valleys. The gentle eastern slopes are favorable for large	Fair trafficability on existing roads and in valleys, especially on the east slopes.	See FM 90-6 , Mountain Operations

	scale maneuver.		
Najd Plateau	This open desert provides excellent trafficability except where local surface conditions may be a hindrance. Wadis, occasional hills and mountains, and lava beds may be impassible.	Fair to poor trafficability depending on local surface conditions may wear out tires and disable vehicles.	See FM 90-3 , Desert Operations
Northern Arabia	This open desert provides excellent trafficability except where local surface conditions may govern. The extremely harsh conditions will have a significant effect on any operation.	Poor trafficability due to the broken surface.	See FM 90-3 , Desert Operations
Nafud Dahna, and Rub al Khali Deserts	These sand deserts are excellent for tactical vehicle maneuver; however they are remote to key regions of the country.	Poor to impassible depending on local surface conditions.	See FM 90-3 , Desert Operations
Eastern Arabia (Al Hasa)	Flat lowlands of the Persian Gulf provide fair trafficability depending on local conditions. Further inland extremely harsh conditions exist due to highly eroded surface.	Fair to poor trafficability in the Persian Gulf region and poor to impassible further inland.	See FM 90-3 , Desert Operations

(3) In the Asir Range south of Mecca, the mountains are higher, exceeding 2,500 m with some peaks reaching over 3,000 m. The rugged western face of the escarpment drops rather steeply to the coastal plain (the Tihama Lowlands), which averages only 64 km in width. The top of the mountain ridge is covered in places by narrow strips of juniper trees which provide the only natural forest in the country. Luxuriant undergrowth gives these strips--many only a few meters wide--the character of a tropical rain forest.

(4) The eastern slope of the mountain range is gentle, melding into a plateau region that drops gradually into the Rub al Khali, one of the most forbidding sand deserts in the world and, until the 1950s, one of the least explored. Rainfall is infrequent in this area; but a number of fertile wadis, chiefly the Bishah and the Tathlith, do exist. Extensive lava beds (harrat) scar the surface of the plateau east of the mountain ranges of the Hejaz and Asir Ranges, wells are abundant and springs are common in the mountainous areas.

(5) The great plateau of the Najd, the heartland of the country, lies east of the Hejaz and Asir. This region is mainly a rocky plateau interspersed with small, sandy deserts and isolated mountain clumps. The best known of the mountain groups is the Jabal Shammar, northwest of Riyadh and just south of the Nafud Desert. The plateau slopes towards the east from an elevation of 1,372 m in the east. A number of wadis cross the region in a generally eastward direction from the Red Sea escarpment toward the Persian Gulf. The heart of the Najd is the area of the Jabal Tuwaiq, an arc-shaped ridge whose steep west face rises to between 122 and 244 m above the plateau. Many cases exist, making this one of the most densely populated areas in the country. The oasis of Buraydah, Unayzah, Riyadh, and Al Kharj are the most populated. Outside this oasis area the Najd is sparsely populated. Sabkahs, large salt marshes, are scattered throughout the area, and water is available in few places. Even where water is plentiful, the quality is generally poor.

(6) Northern Arabia comprises the area north of the Nafud Desert and is geographically a part of the Syrian Desert. The area is an upland plateau with a surface of dark-colored rock and gravel and is scored by numerous wadis, most of which run northeastward toward Iraq. This area, known as Badiet ash Sham, is covered with grass and scrub steppe vegetation and is extensively used for pasture by nomadic and seminomadic herders. The most significant feature of the area is the Wadi as Shirhan. This is a large basin, as much as 305 m below the surrounding plateau, that is the remnant of an ancient inland sea. For thousands of years some of the most heavily traveled caravan routes between the Mediterranean and the central and southern peninsula have passed through the Wadi as Sirhan. The most important cases in the area are Al Jawf and Sakaka, just north of the Nafud.

(7) Eastern Arabia (Hasa) consists of the rocky Summam Plateau, east of the Dahna Desert. The plateau is about 120 km wide and drops in elevation to about 245 m in the east. The area is generally barren and has a highly eroded surface of ancient river gorges and isolated buttes. Farther east the terrain changes abruptly to the flat lowlands of the Persian Gulf coastal plain. This area, about 160 km in width, has no significant terrain features and is generally covered with gravel or sand. The gravelly Dibdiba Plain lies to the north. To the south is the Jufura sand desert. The Jafura reaches the Persian Gulf in the vicinity of Abqaiq and Dhahran and merges with the Rub al Khali at its southern end. The coast itself is extremely irregular as sandy plains, marshes, and salt flats merge almost imperceptibly with the sea. As a result, the land surface is unstable; water rises almost to the surface in places and the sea is shallow and full of shoals and reefs for an

extended distance offshore. Only the construction of long rock breakwaters at Ras Tanura has opened the Saudi Persian Gulf coast to seagoing tankers. Eastern Arabia is one of the most potentially fertile areas of the country. Water from artesian wells and springs is plentiful and there are also a number of large deep pools that are constantly replenished by artesian springs.

(8) Three great deserts isolate the Najd from the north, east, and south, as does the Red Sea escarpment from the west. In the north the Nafud Desert--sometimes called the Great Nafud--covers about 65,000 km² at an elevation of about 900 m. Longitudinal dunes which are approximately 60 to 80 km in length, some 90 m in height and separated by valleys as wide as 16 km characterize the Nafud. Iron oxide gives the sand a reddish tint, particularly when the sun is low. There are several watering places in the area, and winter rains bring up short lived, but succulent grasses that permit nomadic herding during the winter and spring.

(9) The Dahna is a narrow band of sand mountains (also known as the river of sand) which stretches more than 645 km south from the Nafud in a narrow arc about 50 km wide. Its sand also tends to be reddish in color, particularly in the north where it shares the longitudinal structure of sand dunes with the Nafud. The Dahna furnishes the Bedouin with winter and spring pasture although water is more scarce than in the Nafud. The southern portion of the Dahna curves westward following the arc of the Jabal Tuwaiq and merges in the south with the Rub al Khali. The topography of the Rub al Khali covers more than 650,000 km² and is varied. In the west the elevation is about 610 m and the sand is fine and soft; in the east the elevation drops to about 185 m and much of the surface is covered by relatively stable sheets of sand and salt flats. Longitudinal sand dunes prevail, particularly in the east. Elsewhere, sand mountains as high as 300 m form complex patterns. Most of the area is totally waterless and uninhabited except for a few wandering Bedouin tribes. Water, which generally must be pumped or hoisted to the surface, is available in limited quantities in widely separated areas of the Dahna.

b. Urban area.

(1) Saudi Arabian towns and cities historically fall into two major categories--those inside and those outside the Hejaz. The holy cities of Mecca and Medina and the diplomatic capital of Jiddah all fall within the Hejaz. These Hejaz cities are the largest in the country after the capital of Riyadh and are composed of people from many parts of the world ([Table 46](#)). These cities have experienced the effects of Saudi oil discovery less than the more conservative cities of the central and eastern regions.

Table 46. Urban area.

<u>REGION/CITY</u>	<u>REMARKS</u>
Njad, interior Riyadh	1 million population; royal capital
Red Sea Jiddah Mecca	1 million population; port city; diplomatic capital 550,000 population; holiest city of Islam toward which Muslims pray; non-Muslims are forbidden.
Medina	350,000 population; second holiest city and burial place of the prophet Muhammad; non-Muslims are forbidden.

(2) The huge influx of wealth and people into old towns like Riyadh, Buraydah, and Unayzah has transformed these traditional family-centered communities into congested melting pots of workers representing many cultures. The presence of foreigners, and the wealth they represent, has put serious strains on housing facilities, price levels, and public services in general, as well as on the traditional aspects of the Islamic way of life. Foreigners in the major cities usually live in their own separate communities, but must respect Saudi religious and social customs.

c. Coasts and beaches. Saudi Arabia has 2,510 km of coastline. It declares 12 nm as a "necessary supervision zone." The country also claims many small islands as well as some seabeds and subsoils beyond the 12nm limit. While maritime boundaries with Bahrain, the island state off Saudi Arabia's northeastern coast, have been agreed upon, claims with other Saudi neighbors along the Persian Gulf including Iran are in an almost constant state of negotiation and adjustment. Coast and beach access to Saudi Arabia is evaluated in [Table 47](#).

Table 47. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Persian Gulf coast	The shallow water and number of shoals, reefs, and sandbars make this coast unsuitable for amphibious operations. Access, if strategically necessary, would best be accomplished through the developed harbors. (Figure 4-4).	The coast is remote from key areas of the country except via the harbors and oil export facilities. A Pakistani division is stationed in the Hasa Province oil

Red Sea coast	The narrow beaches which are dominated by the Hejaz and Asir Mountains are poorly suited for large scale amphibious operations. The restricted access to the Red Sea itself is a negative factor. Access, if necessary, would best be accomplished through the developed harbors (Figure 4-4).	field area to provide security for this critical zone This coast would give access to the holy cities of Mecca and Median, and the diplomatic capital of Jiddah.
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6. LOCs. Transportation facilities have increased dramatically in the last 15 years; however, services are still inadequate to meet the country's economic and human needs.

a. Roads. The road system has undergone tremendous expansion in recent years. The government plans to continue expansion on the roads. Saudi Arabian roads which are built according to American standards are constructed to support loads of 16 tons. Widths vary from 6 to 9 m. Due to road use by vehicles with loads exceeding the tonnage limit, early road rehabilitation is required. [Table 48](#) identifies the road network. [Figure 4-5](#) and [Table 49](#) depict and locate the main routes.

Table 48. Road network.

<u>TYPE</u>	<u>LENGTH</u>
Paved (Bituminous)	35,000 km
Gravel and improved earth roads	39,000 km

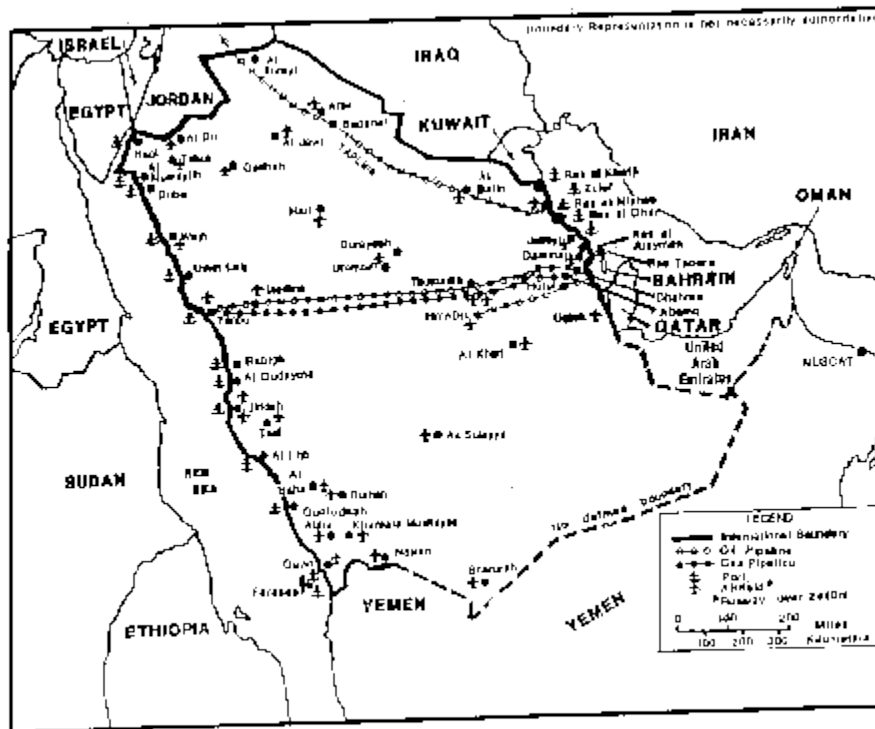


Figure 4-4. Ports, airfields, and pipelines of Saudi Arabia.

Table 49. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Jiddah-Qunfudhah-Qizan Al Hudayah (Yemen)	1,075 km	None
Jiddah-Medina-Tabuk-Al Mudawwarah (Jordan)	1,235 km	None
Jiddah-Yanbu-Wejh-Haql-Al Aqaba (Jordan)	1,110 km	None
Jiddah-Mecca-Taif	120 km	Principal route; climbs from sea level to 2,386 m with 150 switchback curves.
Taif-Bishah-Khamais Mushayat	550 km	None
Mecca-Taif-Bishah-Najran	898 km	Non
Riyadh-Buraydah-Hail Medina	1,011 km	Principal route
Riyadh-Hufuf-Dhahran	447 km	Principal route
Riyadh-Hufuf-Doha (Qatar)	598 km	None
Dhahran-Dammam-Ras	69 km	None

Tanura		
Jubayl-Al Qaysumah-Jordanian border	1,255 km	TAP Line road was extensively used by Desert Storm soldiers
Riyadh-Al Karj-As Sulayyil-Najran	960 km	None

b. Railroads. Only one railroad line exists in Saudi Arabia, from Damman to Riyadh. [Table 50](#) identifies the Saudi rail network. [Table 51](#) identifies the main routes. A line linking Jiddah and Mecca is planned, mainly to carry pilgrim traffic. The old Hejaz Railway which connected Amman, Jordan with medina is now derelict; sporadic efforts have been made to rebuild the line. [Figure 4-5](#) locates the railroads.

Table 50. Railroad network.

<u>TYPE</u>	<u>REMARKS</u>
Rail headquarters	Saudi Government Railroad Organizations Dhahran, Saudi Arabia
Standard gauge track	1,435 m 886 km
Motive power	26 diesel locomotives
Rolling stock	17 passenger coaches 85 tank cars 5 baggage wagons 831 freight cars

Table 51. Main railway routes.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Riyadh-Hufuf-Abqaiq	577 km	170 km of subsidiary lines construction underway to link Dammam with Jubayl.

c. Ports. Saudi Arabia's main ports are Jiddah and Yanbu on the Red Sea and Ras Tanura, Dammamm and Jubayl on the Persian Gulf. [Table 52](#) provides a list of major ports and their capabilities. Minor ports are identified in [Table 53](#). [Figure 4-4](#) identifies all port locations.

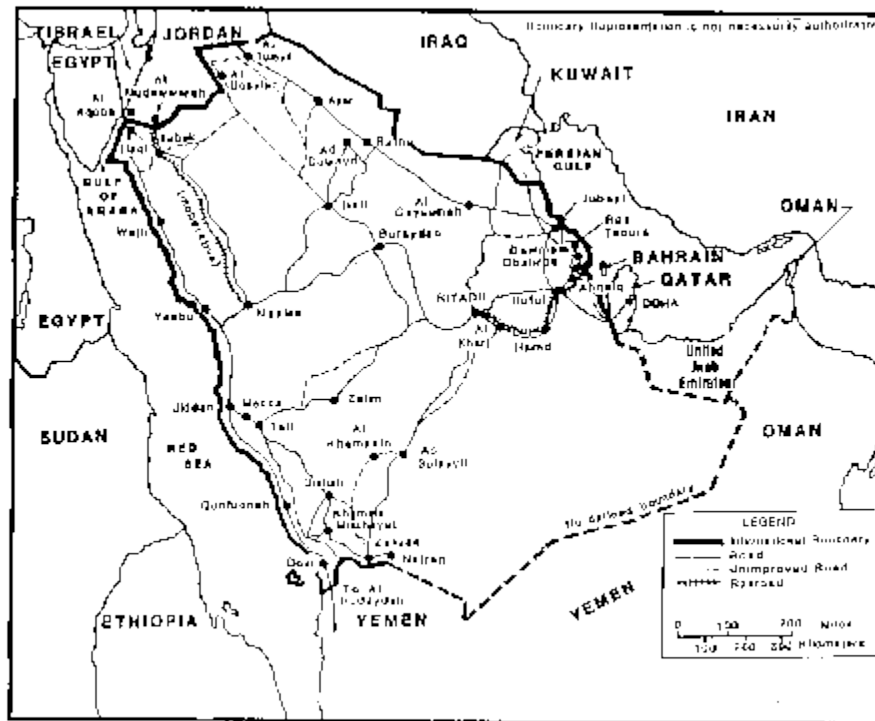


Figure 4-5. Roads and railroads of Saudi Arabia.

Table 52. Major ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Persian Gulf	
Dammam	Major commercial port; large, deep-water port; 40 berths; roll-on/roll-off; full provisioning.*
Jubayl	Major commercial port; 2 harbors, one industrial with 9 berths for bulk cargo and 1 commercial with 14 berths; roll-on/roll-off; full provisioning.
Ras Tanura	Major oil tanker facility; open water anchorage.
Ras al Ghar	Government port; 10 docks (includes 2 floating docks and a 3 km pier).
Ras al Mishab	Ministry of Defense and Aviation facility; 8 berths; roll-on/roll-off.
Ras al Juaymah	Offshore oil terminal.
Ras al Khafji	Oil terminal.
Zuluf	Inoperative offshore oil terminal.
Red Sea	
Jiddah	Primary Saudi port; port of entry for Mecca pilgrimage; 43 berths; extensive modernization underway.

Yanbu	Major commercial port; Medina pilgrimage port; 9 berths; extensive cargo, container, and storage facilities; roll-on/roll-off; full provisioning.
Qisan	Major commercial port; 14 berths.
*Includes fuel, fresh water, and food.	

Table 53. Minor ports.*

Red Sea		
Haql	AILithqq	Al Muwaylih
Wejh	Qunfudhah	Rabigh
Ummlaij	Farasan	Al Qudayma
		Duba
Persian Gulf		
Darin (10 km N of Dammam on small island)	Al Khubar (7 km E of Dhahran)	
Qatif (19 m NW of Dammam)		
*Suitable for small craft only.		

d. Air transportation. Air is the preferred method of travel in order to minimize the vast distances between the country's population centers. [Table 54](#) identifies the air network. The primary international airports are at Riyadh, Jiddah, and Dhahran with numerous smaller airports and landing areas scattered throughout the area. [Table 55](#) and [Figure 4-4](#) identify and locate the main airfields. The government-owned Saudi Arabian Airlines, the largest airline in Southwest Asia, is headquartered in Jiddah and provides regular services to all major cities.

e. Water transportation. Saudi Arabia has no permanent rivers or bodies of water.

f. Pipelines. Saudi Arabia's pipeline network is identified in [Table 56](#). Saudi's pipeline system consists of both domestic and international pipelines ([Figure 4-4](#)). The pipeline network collects crude oil from production area, including those offshore, and carries it to the refining and shipping terminals at Ras Tanura and Jubayl ([Figure 4-6](#)). Saudi Arabia is considering a spur line from the Trans-Arabian Pipeline (TAPLine) to the Red Sea port of Duba and a pipeline

from the Persian Gulf fields through Oman providing an Indian Ocean terminal. The Saudis objective is to lessen their dependency on the shipping lanes through the Strait of Hormuz.

NOTE: There are several desalination plants along the Persian Gulf and Red Sea coasts. These plants extract fresh water from salt water. Above and below ground pipelines are used to transport fresh water from the plants to distribution points.

Table 54. Air transportation network.

AIRFIELDS	207 (188 USABLE)
Runway type	
Permanent surface	69
Unpaved fields and usable airstrips	119
Unusable airstrips	19
Runway length*	
Over 3,660m	13
2,440-3,659m	38
1,220-2,439m	103
Under 1,220m	34
*Runway lengths are for paved and unpaved usable airfields only.	

Table 55. Airfields.*

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Abha	Civil aviation field; 24 km SW of Khamais Mushayat; one 3,350 m asphalt runway; sited on sandy desert terrain; used by Saudi Arabian Airlines.
Al Baha	Civil aviation field; .5 km SE of Al Baha; one 3,350 m asphalt runway; sited in mountainous terrain.
Al Bir	Highway strip; 9 km WNW of Al Bir; one 3,050 m asphalt runway constructed as part of road; sited in plains area.
Al Jawf	Civil and military field; 16 km E of Al Jawf; one 3,300 m asphalt runway; sited on north Arabian plain; used by scheduled Saudi Arabian Airlines domestic services and by Saudi Arabian military aircraft.
Al Kharj	Civil aviation field; 98 km SE of Riyadh; one 3,350 m (estimated) runway; sited on level terrain.
Arar	Civil aviation field; 16 km SSE of Badanah; one 3,050 m asphalt runway; sited on plain with scattered dunes; used by Saudi Arabian Airlines and ARAMCO.
Bishah	Civil aviation field; 160 km N of Khamais Mushayat; one 3,050 m asphalt runway; sited on level desert area; used by Saudi Arabian Air Force.
Dhahran	Civil aviation field; 3.5 km SE of Dhahran; one 3,660 m, one

International	3,600 m and one 2,475 m asphalt runway; sited on a slightly rolling coastal plain; used by commercial airlines, Saudi Arabian military aircraft; USAF personnel stationed on base in US compound; also known as King Abdul Aziz AB.
Unayzah	Civil aviation field; 11.5 km WSW of Burayday; one 3,000 m asphalt runway; sited in a round and rocky area; used by Saudi Arabian Airlines and Saudi Arabian Air force aircraft.
Hail	Saudi Arabian Government field; 8 km S of Hail; one 3,000 m asphalt runway, sited on open sandy plain; used by domestic commercial aircraft.
Jiddah International	Saudi Arabian Government civil terminal on outskirts of Jiddah; one 3,230 m and one 3,000 m concrete runway; sited on flat sandy coastal plain; used by international airlines, Saudi Arabian Air Force aircraft; site of Saudi Army Airborne School and Air Defense Operations Center.
Jubayl	Military/civil field still in construction phase; one 4,000 m asphalt runway; sited on relatively flat desert.
*Runway length 2,440m or longer	
Khamais Mushayat	Military airfield; 8 km E of Khamais Mushayat; one 3,800 m and one 3,800 m and one 3,300 m asphalt runway; used by both commercial and military aircraft; air defense center for the southern sector of Saudi Arabia; also known as King Khalid AB.
King Abdul Aziz International	Civil aviation terminal; 19.2 km N of Jiddah; one 3,800 m concrete; one 3,690 m, and one 3,300 m asphalt runways; sited on a flat sandy coastal plain; airport handles heavy annual pilgrimage traffic; Saudi Arabian Air Force also uses the facility.
King Khalid International	Civil aviation terminal; 35 km NE of Riyadh; two 4,200 m and one 3,200 m asphalt runways; the latter still under construction; sited on flat sandy desert; airfield is used by civil, commercial and military aircraft.
King Khalid military city	Civil/military field; serving the military city which is being constructed 56 km SW of Al Batin; one 3,600 m asphalt runway; sited on level terrain.
Medina	Government controlled field; 9 km NE of Medina; one 3,050 m and one 2,600 m asphalt runway; sited on hilly and rocky desert; used by civil, commercial and military aircraft.
Najran	Saudi Arabian Air Force field at Najran; one 3,050 m asphalt runway; sited in a valley with nearby hills; used by domestic commercial and military aircraft.
Qalibah highway strip	Highway segment field; 130 km E of Tabuk; on highway to Jordan; one 2,965 m asphalt runway; sited on sandy desert.
Qizan	Military airfield; 2.4 km NE of Qizan; one 3,050 m asphalt runway; sited on level coastal flat; domestic commercial aircraft also use the field.
Ras al Mishab	Ministry of Defense and aviation field; part of Ras al Mishab Port complex; one 2,440 m asphalt runway; sited on level terrain; used by ARAMCO and military aircraft.
Rayadh International	Civil aviation terminal at Riyadh; one 4,050 m and one 3,590 m asphalt runway; sited on flat sand and gravel desert; major commercial terminal used by international, domestic, civil, and military aircraft; location of the National Air Defense Center and

	the Saudi Arabian Air Force pilot training school (King Faisal Air Force Academy).
Sharurah	Military field at Sharurah; one 3,600 m asphalt runway; sited on level sandy terrain; used by civil and military aircraft; army base nearby.
As Sulayyil	Civil aviation field at As Sulayyil; one 3,009 m asphalt runway; sited on level sandy terrain; used by civil and military aircraft; army base nearby.
Tabuk	Civil/military field; 6.5 km SE of Tabuk; one 3,350 m and one 3,050 m asphalt runway; sited on a plateau; used by domestic commercial and military aircraft; airfield is the largest military airfield in the country; also known as King Faisal AB.
Taif	Civil aviation field; 22 km NNE of Taif; one 3,735 m and one 3,050 m asphalt runway; sited on a plateau; used by domestic commercial and military aircraft; airfield is the largest military airfield in the country; also known as King Faisal AB.
Thumama	Civil/military field; 54 km N of Riyadh; one 4,000 m asphalt runway; sited on a gravel plateau; used by civil and military aircraft.
Ugtah highway	Highway segment field; 152 km S of Dhahran; one 3,050 m asphalt runway with no facilities; military dispersal or emergency use.
Wejh	Civil aviation field; 3.2 km S of Wejh town; one 3,050 m asphalt runway; sited on low coastal plain.
Yanbu	Civil aviation field; 4.8 km NE of Yanbu; one 3,200 m asphalt runway; one level sand and gravel coastal flat; used by domestic commercial and military aircraft.

Table 56. Pipeline network.

TYPE	LENGTH
Crude oil	6,400 km
Refined products	150 km
Natural gas (includes natural gas liquids)	2,200 km
<u>MAJOR PIPELINES</u>	<u>DESCRIPTION</u>
Trans-Arabian pipeline	TAPLine carries crude oil to a Mediterranean outlet near Sidon, Lebanon; currently the pipeline is only being used as far as Amman, Jordan.
East-west crude oil pipeline	Ras Tanura to Yanbu; 1,200 km long; carrying only 40% of its daily capacity of 1.8 million barrels per day; capacity may eventually be raised to 3.7 million barrels per day.
Gas liquids pipeline	Ras Tanura to Yanbu; follows the same route as the crude oil pipeline.

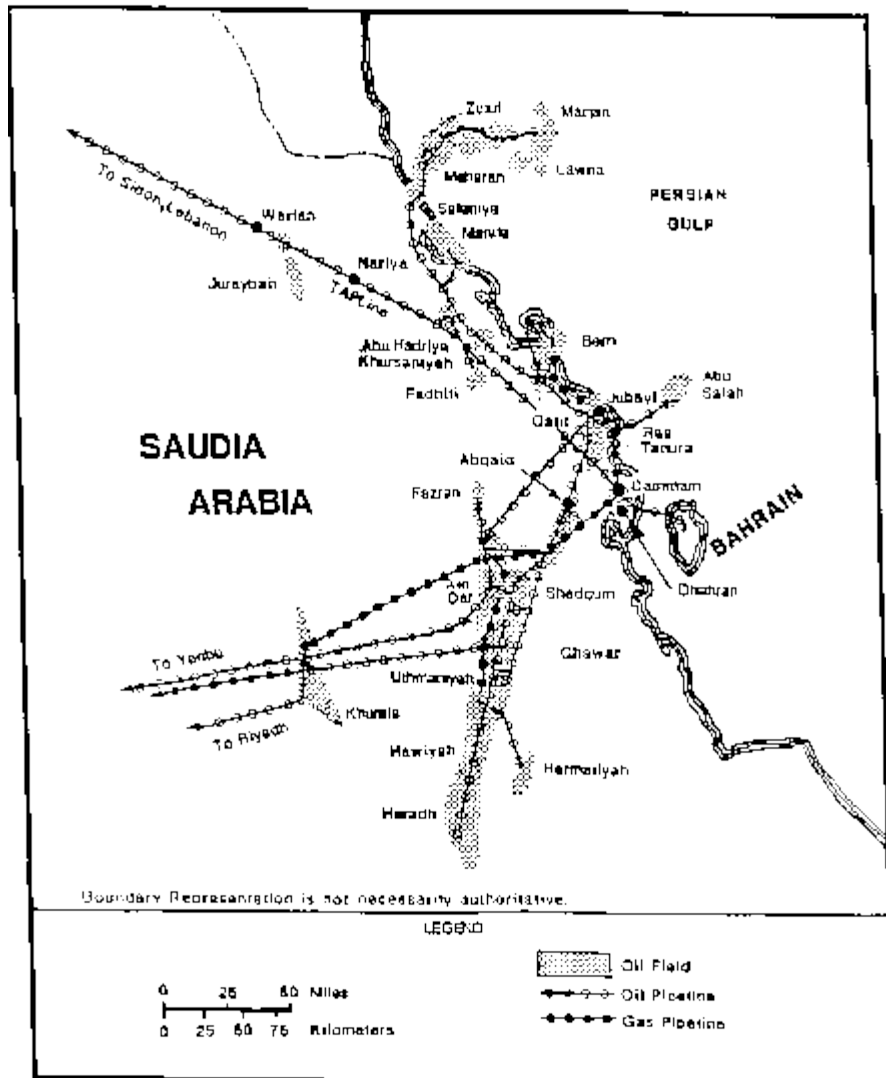


Figure 4-6. Persian Gulf pipelines.

PART B: MILITARY CAPABILITES OF SAUDI ARABIA

1. Background. In 1944 King Abd al Aziz created the office of the Minister of Defense as the first formal organization responsible for the development of the armed forces in Saudi Arabia. However, the present Ministry of Defense and Aviation was not established until 1953. When Faisal became King in 1964, he reorganized the entire military system along present day lines. The Saudi Armed Forces have received combat experience in the Yemeni Civil War, the June 1967 and October 1973 Arab-Israeli wars, and in Operation Desert Storm as part of the multi-national forces in their effort to oust Iraqi troops from Kuwait and the northern part of Saudi Arabia.
2. Command. The Armed Forces defense structure is headed by the king who is also the Commander in Chief of the armed forces. His brother is the Minister of Defense and Aviation ([Figure 4-7](#)).
3. Armed Forces. The branches of the Armed Forces include Army, Air Force, Navy, Air Defense, National Guard (White Army), and paramilitary forces. The armed forces are assigned to safeguarding

the integrity of the national boundaries and seaward frontiers. In times of internal disorder, they also have a responsibility for maintaining the internal security of the kingdom. The National Guard has exclusive control of the oil-producing eastern province and the general mission of supporting the Armed Forces in maintaining internal security. The National Guard is also used to assist the regular Armed Forces in repelling an invasion; however, its most important, if unstated, mission is to suppress military insurgencies. Special anti-insurgency units are maintained within both the National Guard and the regular army.

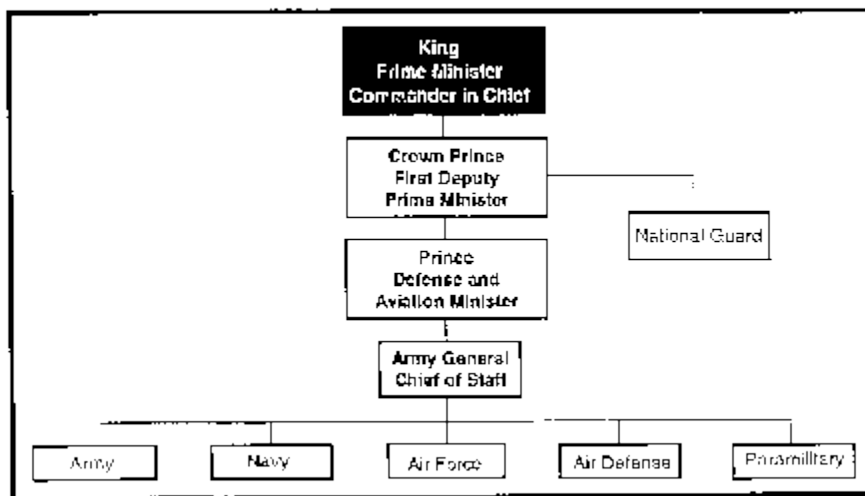


Figure 4-7. Saudi Armed Forces command structure.

a. The Saudi Army consists of volunteers. It is the Army's mission to defend the country. Army units are listed in [Table 57](#). The army has expanded rapidly from some 40,000 in the late 1980s to around 70,000 today. Nonetheless, the current force structure is undermanned by 20-30%. In 1991, a joint US-Saudi review proposed an expansion to between seven and nine divisions but this was over-ambitious. Current Saudi plans appear to call for the creation of five divisions, instead of the current brigade structure, which would increase total army manpower to some 120,000 men.

Table 57. Saudi Army units.

2 x Armored brigades 4 x Mechanized infantry brigades 1 x Infantry brigade 1 x Airborne brigade (Figure 4-8) 5 x Artillery battalions 1 x Royal Guard regiment (with 3 x battalions)

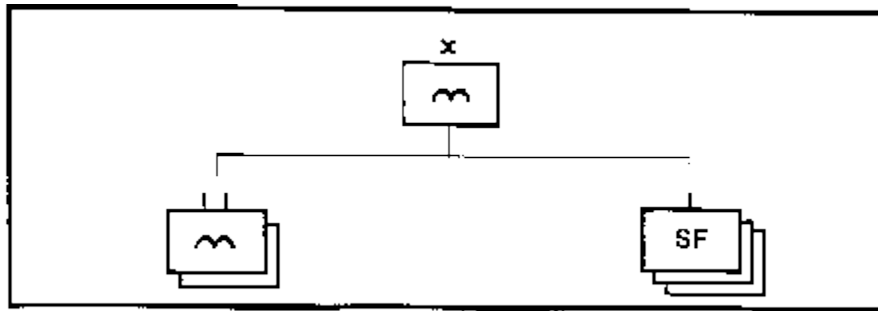


Figure 4-8. Saudi airborne brigade.

b. The Saudi Air Force consists of volunteers also. It is the air force's mission to conduct independent air attacks against enemy targets, participate in the defense of the country against hostile air action, and support the army and navy by air strikes, reconnaissance, air resupply, and transport ([Table 58](#)). Bases are at Jubayl, Khamais Mushayat, King Khalid, Najran, Qizan, Riyadh, Sharurah, Tabuk, and Thumama ([Table 55](#) and [Figure 4-4](#)).

Table 58. Saudi Air Force units.

5 x FGA squadrons
3 x Fighter squadrons
1 x RECCE squadron
2 x Operational control unit (OCU) squadrons
3 x Transport squadrons
2 x Helicopter squadrons
1 x AEW squadron

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c. The Royal Navy will be reorganized and improved in the wake of recent developments in the region, including the emergence of a submarine threat and the perceived threat from extreme fundamentalism on the other side of the Red Sea. The Saudi Navy consists of volunteers. Most are assigned to naval vessels ([Table 59](#)). Bases are at Riyadh (HQ) Jiddah, Yanbu, Jubayl, Dammam, Ras al Mishab, and Ras al Ghar ([Figure 4-4](#)). Furthermore, there is 1 x Marine infantry regiment attached to the navy.

Table 59. Saudi naval equipment.

8 x Frigates
9 x Missile craft
3 x Torpedo craft
5 x Minesweepers/minelayers
16 x Amphibious craft
5 x Support ships
20 x Armed helicopters

- d. The Saudi Air Defense Forces is also a separate command under the Chief of Staff. It has approximately 33 x surface-to-air (SAM) batteries. Furthermore, the Saudis bought the first of six Patriot missile batteries in September 1990 and completed delivery by 1993.
- e. The Saudi National Guard is directly under royal command ([Table 60](#)).

Table 60. Saudi National Guard

2 x Mechanized infantry brigades each with 4 x all arms battalions
2 x Infantry brigades (2 x more are forming) 1 x Cavalry squadron (ceremonial)

- f. Paramilitary forces consist of a Frontier Force including the Coast Guard with 400 x boats and 24 x hovercraft, General Civil Defense Administration units with 10 x helicopters, and a Special Security Force with 500 x UR-410 APC.
- g. Saudi Armed Forces manpower is shown in [Table 61](#).

Table 61. Saudi Armed Forces Strength.

Army	40,000
Air Force	18,000+
Navy	8,000
Marines	1,500
Air Defense Forces	4,000
National Guard	<u>55,000</u>
	126,500
Paramilitary	
Frontier Force	10,500
Coast Guard	4,500
General	
Civil Defense	
Adm Units	not available
Special Security Force	<u>not available</u>
Total	141,500

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Lesson 4

Practice Exercise

Instructions

The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

1. Which battalions are in the mechanized infantry brigades of the Saudi National Guard?
 - ☐ A. 4 x all arms battalions.
 - ☐ B. 4 x mechanized infantry battalions.
 - ☐ C. 2 x armored and 2 x mechanized infantry battalions.
 - ☐ D. 2 x artillery and 2 x armored battalions
2. Where is the Saudi railroad headquarters?
 - ☐ A. Riyadh.
 - ☐ B. Dammam.
 - ☐ C. Hufuf.
 - ☐ D. Dharan.
3. In which two Saudi cities are non-Muslims forbidden?
 - ☐ A. Jiddah and Riyadh.
 - ☐ B. Mecca and Medina.
 - ☐ C. Hufuf and Dhran.
 - ☐ D. Yanbuh and Zalim.
4. Which Saudi coastline is unsuitable for amphibious operations?
 - ☐ A. Red Sea.
 - ☐ B. Mediterranean.
 - ☐ C. Persian Gulf.
 - ☐ D. Gulf of Akaba

5. Which branches are included in the Saudi Armed Forces?

- A. Army, Air Force, Navy, and Coast Guard.
 - B. Army, Air Force, Navy, National Guard, Air Defense, and paramilitary.
 - C. Army, Navy, RFGC, Pasdaran, and Gendamerie.
 - D. Army, Air Force, Navy, and paramilitary.
-

APPENDIX A

ACRONYMS AND ABBREVIATIONS

AD	Air Defense
APC	armored personnel carrier
ATGM	antitank guided missile
Basij	Iranian popular mobilization army
° C	Degree(s) centigrade
C ²	command and control
cm	centimeters
FGA	fighter ground attack
FHQ	Field Headquarters
ft	feet
GHQ	general headquarters
IFV	infantry fighting vehicle
IIAF	Islamic Imperial Armed Forces
IIArF	Iranian Islamic Air Force
IIGF	Iranian Islamic Ground Force
IIN	Iranian Islamic Navy
IISS	International Institute for Strategic Studies
IRGC	Iranian Revolutionary Guard Corps (Pasdaran)
IRP	Islamic Republican Party
km	kilometer(s)
LOC	Lines of communication
m	meter(s)
MG	machine gun
MRL	multiple rocket launcher(s)
nm	nautical miles
OCU	operational control unit
P-ID	Political Ideological Directorate
RECCE	Reconnaissance control element
RGC	Revolutionary Guard Corps
RGFC	Republican Guard Forces Command
SAM	surface-to-air missiles
SDC	Supreme Defense Council
SSM	surface-to-surface missiles
TAPline	Trans-Arabian pipeline
UAE	United Arab Republic
UNIIMOG	United Nations Iran/Iraq, Military Observer Group
UTC	universal time coordinated

APPENDIX C

MILITARY AIRCRAFT MARKINGS

